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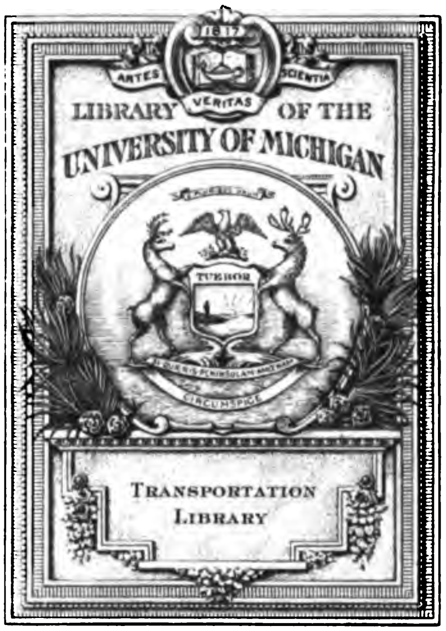

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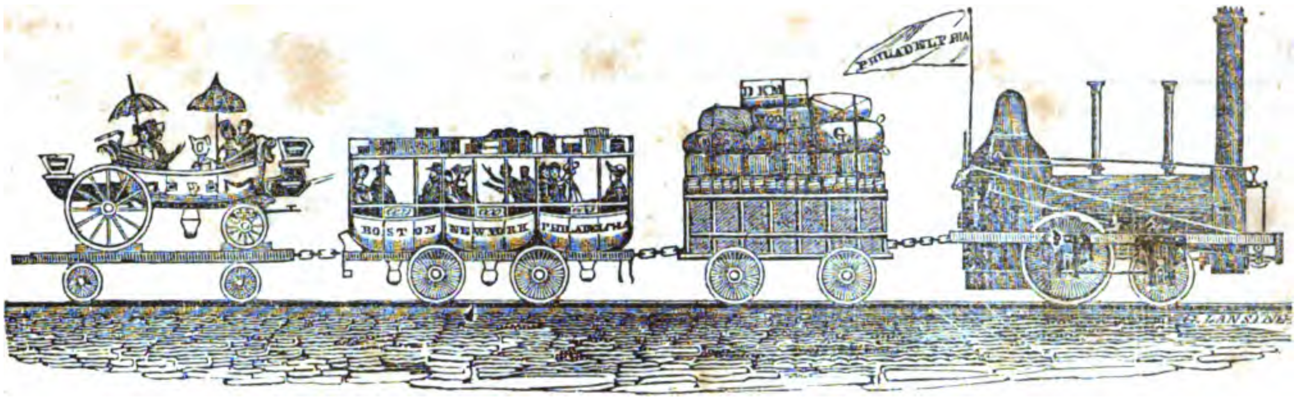

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NEW-YORK, JULY 6, 1833.

☞ Books for Subscriptions to the Stock of the *New-York and Erie Railroad* will be opened on the 9th, 10th, and 11th of July, inst. at the Merchants' Exchange, in this city.

NEW-YORK AND ALBANY RAILROAD.—We are again called upon by the importance, to this community, of the above named Railroad, to ask for the following statement of facts an attentive perusal. They will satisfy, we believe, any unprejudiced and candid person, that the project for a railroad from this city to Albany, through the eastern, or even the more central, part of the counties lying east of the Hudson, and bordering upon Connecticut and Massachusetts, will not only prove a safe, but in fact a judicious investment to the capitalist. It has been urged by many, and with very plausible arguments too, that a railroad so near, and parallel to, such a water course as the Hudson, can never become productive stock; because, they say, transportation cannot be effected as cheap upon it as upon the river; this may be true so far as it relates to goods intended for, or produce deposited in, the storehouses immediately on the river, and during nine months of the year, but not so when we refer to the interior or remote parts of those counties, as well as to the counties in the adjoining states, where they have to pay, in addition to river freight, the expense of transportation to, and often of storage at, the river: nor can the trip to and from New-York be performed with the same ease, facility and despatch, by the river as by a railroad. The ordinary rate of speed upon the river does not now exceed about twelve miles per hour, whilst 15, and even 20, miles may with ease be attained on a railroad by locomotives—and we have not a doubt that greater improvements will be made in the construction of railroads and railroad machinery within twenty years to come, than have been made in steamboats within twenty years past; nor do we believe that we calculate too sanguinely upon the spirit of the age, when we say that our faith is strong in the belief that, before the 4th of July, 1850, the man of business may take his breakfast and tea in New-York and dine the same day in Albany. With a railroad from New-York to Albany there will be more uniformity of business than at present; the farmer and manufacturer will be able to send the produce of their labor to market as soon as it is ready, instead of keeping it on hand until the river opens, and especially those articles of a perishable nature, by exposure to warm weather. Butter, lard, poultry, pork, and various other articles equally necessary for every day's use, may be brought to market with as great ease during the coldest days of winter as at any other season, by which means the farmer will receive good prices, and the citizen will obtain them at a more reasonable rate than at present.

There will be found in this number of the Journal a communication from Mr. Sullivan, on the preservation of Wood Rails. It is a subject well worthy of investigation, particularly at the present moment, when books are to be opened for two railroads of such vast importance as the *New-York and Erie* and *New-York and Albany*. If the theory is correct, an immense amount of money may be saved by its adoption; if not correct, it should be so decided before it shall have been extensively adopted.

We observe in the Albany Daily Advertiser, a very particular account of the first locomotive engine placed upon the Saratoga Railroad.

According to this account, it is one of the most complete locomotives which have been invented. It left Schenectady with a train of freight waggons, on the morning of the 2d of July, overtaking a train of passenger cars at Ballston, which it took up in addition, and with these arrived at Saratoga in one hour and forty minutes, stoppages included. Its second trip over, was in the afternoon of the same day. It left Schenectady at 5 P. M. with a train of cars, and reached Saratoga in one hour and thirty minutes, stoppages included; and this was during a heavy thunder shower, working with only about thirty pounds of steam, over muddy rails. A gentleman who was passenger states, that, during some part of the way, the speed was at least thirty miles per hour! After a very minute description of every part, too much in detail for our space, the Albany Daily concludes with the following summing up of its properties:

The engine is very easily cleaned, and is by its convenient arrangement as easily managed.

It is capable of drawing 15 tons at the rate of 17 miles an hour, and even more, with about five bushels of coke, which will cost perhaps 10 or 12 shillings.

It will do the work of 50 horses, which are an expense of $50 a day, for the comparatively trifling sum of $15 a day, *all* expenses included.

It will enable travellers to reach Saratoga in two hours and a half from Albany, if the Mohawk company do not suffer the private interests of two or three persons to create unnecessary delays at Schenectady—delays against which there is an unanimous complaint.

It shows what may be done by good management, on a cheap and useful road; and adds another to the many proofs already existing, of the skill and good conduct of the directors and agents of the Saratoga company.

The engine itself is a model of excellence and elegance, and may be considered the ne plus ultra of the manufacturer.

The "Camden and Amboy Rail Road and Transportation and the Delaware and Raritan Canal Companies," paid to the Treasurer of the State of New Jersey, on the 27th June, the sum of $15,000, for the first 6 months running passengers, &c. via said Rail Road, being the half yearly payment of the $30,000, stipulated by said companies to be paid to the State of New Jersey, for privileges granted.

UTICA AND SCHENECTADY RAILROAD.—The following are the sums subscribed at the respective places at which the books were opened, for the capital stock of this company.

New York	$5,286,000
Albany	3,257,000
Utica	4,300,000
Schenectady,	1,541,000
	$14,374,000

New-York and Albany Railroad.—Several years have now elapsed since the attention of our citizens was first directed to the important object of opening a direct and improved line of communication from the city of New-York through the heart of the country which lies between the Hudson and Connecticut rivers.

However valuable and important may be the water communications which this city now possesses, it is still desirable to obtain a free intercourse with those parts of the country which are remote from navigable waters. It is also important that this intercourse should be free from the embarrassments and periodical interruptions to which navigation is subject, and from the troublesome and expensive shipments and retransportations to which this mode of conveyance is necessarily subject. Nor can the multifarious productions of the interior country be otherwise brought to the doors of its citizens, or rendered fully available to their comfort, and to the growth and prosperity of both city and country.

Impelled by considerations of this character, a number of our citizens were at a former period induced to undertake the construction of the Sharon canal, a work which afforded the best prospect then known to the public of realizing these objects. Had that work been completed, it would still have failed in the important desideratum of affording a free intercourse during the winter months, when the usual means of conveyance are for the most part unavailable; nor would it have been at all adapted to the advantageous transportation of passengers, which is often the most important and always the most profitable business of a railroad. A concurrence of adverse circumstances, in connexion with the spirit of stock-jobbing, which prevailed so extensively at that period, gave a death-blow to that enterprise at an early stage of its progress. The superior advantages of railways were at that period unknown to the public, and the failure in executing the canal, though painful to its patriotic friends, can at this time hardly be regretted, since it leaves this valuable section of the country open to an improvement of a more useful and important character.

Since the advantages of railways for general purposes have been practically demonstrated, further attention has been given to this important line of intercourse, and near the close of the year 1830 public notice was given of an application to the legislature of New-York, for an act of incorporation for the purpose of constructing a Railway from the city of New-York to a point near Sharon in Connecticut, having in view the general route which had been chosen for the Sharon Canal, and for liberty to extend the railway at a future period so as to intersect the Hudson at or near the city of Albany. But owing to a defect in the publication of this notice, the subject was not at that time brought before the legislature.

The rapid accumulation of the evidence in favor of railroads, and the degree of confidence and expectation which that evidence was calculated to inspire, now rendered it imperative on the friends of this improvement to present its claims before the legislature and the public, on the broad footing of its manifest utility and importance. Legal notice was accordingly given in the summer of 1831, of an application which should comprise the objects first contemplated, and should also provide for a continuous line of railroad to the cities of Albany and Troy: and in addition to its primary objects, thus remove those embarrassments which annually occur from the suspension of the usual intercourse through the channel of the Hudson.

A provisional committee, which was organised in this stage of the proceedings, published a prospectus of the undertaking, in which they remark as follows:

"The rapid extension of the means of improvement, which is resulting from the introduction of railways and the use of locomotive steam engines, has rendered it obvious that the establishment of this mode of intercourse between our great commercial metropolis and the interior portions of the country is not only eligible in itself, but is also demanded by a just regard to our present and future interests. With these views the committee propose to their fellow-citizens to unite their efforts for establishing a line of railway from the city of New-York to the city of Albany, and connecting at that point with the great lines of intercourse which extend through the valleys of the Hudson and the Mohawk, to the Northern and the western lakes. By this means a highly improved and uninterrupted communication will be preserved at all seasons with the interior of the state and its seat of government; new and extensive sources of wealth in the mineral, agricultural, and manufacturing departments of industry will be opened; and a main trunk or channel be formed for a most valuable system of communication with the New-England states, and which will serve as a base line for numerous branches and lateral communications of lesser magnitude and cheaper construction, which the welfare and convenience of the adjacent country will not fail to require."

It will be seen from what has already been premised, that the proposed "New-York and Albany Railroad" is not designed to enter into competition with the general business now transacted on the Hudson river, but will, as its friends believe, find ample support in the general business of the country through which it is destined to pass, and in the exclusive business which it will command at those seasons in which the present communications are obstructed and impassable. It is the proper business of the country which is intersected, that gives the greatest value to the most important channels of intercourse in our country. It will be useful, therefore, to inquire into the amount of business which can be furnished to the railway from the country on its borders, and from those interior districts which must mainly depend on it for their intercourse with a maritime market.

The county of Westchester is the first district to which our inquiries will be directed. This large, populous, and wealthy county will be intersected by the railway at nearly equal distances between the shores of the North and the East rivers. The inhabitants of this county will thus obtain ready access to the city markets, and the impulse which will thereby be given to the agricultural and manufacturing industry of the county must, from the very circumstance of its contiguity to the city of New-York, afford a large annual amount of tonnage and passengers to the railroad, with which its interest will be especially identified. In one of the remote towns in this county, the descending tonnage for a railway has been estimated at near 2000 annually, and the passengers at 800 in each direction. The population of this county in 1830 was 36,476; the valuation of real and personal estate in 1831, was 9,397,840 dollars.

The county of Fairfield, in Connecticut, lies near the contemplated route of the railroad, and the interior portions of it can have no other favorable outlet for the products of their industry, which now contribute much to the general business of the city and country. A branch railway of nine miles will reach Danbury, one of the shire towns of this county, overcoming an elevation of but 43 feet. Some estimate may be formed of the industry and amount of business of this flourishing town, from the fact that two hundred thousand feet of boards are annually used in the construction of packing boxes for the single article of *hats* sent to the New-York market. The number of passengers booked by the stages at the same place is said to be 6000 annually.

The county of Putnam, though of limited extent, will afford much for the support of a railway. Extending from the Hudson at the Highlands to the east line of the State, its most valuable and productive portions will be found contiguous to the railroad. A partial estimate of its transportation has been made by citizens residing near the eastern border of the conuty, which amounts to 7000 tons, and 6000 passengers annually. Population in 1830, 12,701. Valuation of real and personal estate in 1831, $2,198,889.

The county of Litchfield, in Connecticut, next claims our notice. The interior position of this large county, and its proximity to our borders and to the route of the railway, will secure to the latter almost the whole amount of its export and import trade. Possessing in the Housatonic and its tributaries a vast amount of water power, rich in its soil and its extensive deposits of iron ore, limestone, and marble, its productions must be greatly multiplied by the increased facilities which the railway will afford. The iron of this county possesses the highest reputation, and is now transported from Salisbury, on the borders of this state, to the United States' Armory at Springfield, by land, at an expense of twelve dollars per ton. Some estimate of the present business of the county may be formed by an examination of the following statement of its productions and their annual value, by John M. Holley, Esq. which has recently been published:

Pig and bar iron, &c. -	$293,000 00
Manufacture of iron, &c. -	177,650 00
Other productions, produce, &c.	1,414,200 00
Total - -	$1,884,850 00

The number of passengers to and from New-York, furnished by this county, is very great, and constantly increasing.

The county of Dutchess, which has been long distinguished for its agricultural industry and wealth, will contribute much to the permanent business of the railroad. Much of its finest soil lies contiguous to that beautiful valley through which the railway is designed to pass. Careful estimates of the present amount of transportation have been made in some of the towns in the eastern portion of the county, and the result is highly favorable. An average of eight towns in this county, may be supposed to give their support to the railway throughout the year, not to include the business which would be derived from the other towns, and from the flourishing village of Poughkeepsie, in the winter season. The present transportation of three of the above towns, is estimated at 10,167 tons, at the annual cost of 36,168 dollars. Applying this ratio to the eight towns, and then deducting one half of the amount, will afford the estimate which we shall venture to give of the present transportation of this county, which will pertain to the railroad, and is equal to 13,556 tons annually, at an expense of 48,224 dollars. The number of passengers which can be obtained from this county is not known. Population of the county, 50,926. Valuation of real and personal estate in 1831, $16,188,739.

We are next called to notice the amount of business which can be obtained for the railway, from the county of Berkshire, in Massachusetts, the inhabitants of which, owing to its peculiar position, are more deeply interested in the success of this enterprise than almost any other section of country. An examination has been made of the amount of transportation in thirteen towns in the county, which amounts, independent of certain omissions, to 20,981 tons annually, which, at the existing rates, costs 106,157 dollars. The remaining seventeen towns of this large county are represented as affording at least an equal amount, making an aggregate of 212,314 dollars, exclusive of a large number of passengers from the county and other parts of the country more remote from the railway. A respectable inhabitant of that county, in a letter to the corresponding committee, says: "Although the result of this examination exceeds even our hopes, still, in my view, it is not the most interesting feature of the subject. The business which a railway would *create*, and the increased activity which it would give to branches now pursued, is the great point. We have marble in this town suitable for every part of the most splendid dwelling, from the foundation stone, to the mantel and pier-table in the parlor. Every variety of color from white to black is here, with the exception of that which is denominated Egyptian. Yet it avails us nothing: we have no means of transporting it to market. What is here said will, in many particulars, apply with equal force to many other towns." The article of hay, of which vast quantities would be sent to the New-York market, has not been included in the estimate.

In the county of Columbia we may estimate an average of nine towns as being immediately connected with the railway. One of these towns affords a greater amount of transportation than any other town from which returns have been received, and the whole are averaged as equal to the three towns in Dutchess, whose returns have been mentioned. Deducting one-half the amount of this estimate, for proximity to navigation and other considerations, there will remain 15,250 tons, at the annual cost of 54,252 dollars. The population of this county is 39,954. Valuation of real and personal estate 9,776,941 dollars.

Passing over the towns which will be intersected by the railway in Rensselaer county and the city of Troy, we will consider the whole county, as well as that of Albany, as forming the northern terminus of the route, the estimate for which will claim our attention hereafter.

The data on which we proceed in estimating the amount of business which will be afforded to the railroad, though founded on careful estimates in some towns, is necessarily imperfect in regard to others. Some of our estimates may possibly be overrated, others certainly fall short of the truth, and in those towns where a careful re-examination has been made, the amount has been much increased, and there is good reason for believing that the returns on which our results are chiefly predicated, are more precise and authentic than are usually obtained in similar cases. We shall be justified, therefore, in completing our approximate estimation of the business of the country contiguous to the route of the railway, and shall then give to the travel and transportation, which will pass through the entire length of the route, a separate consideration.

We accordingly present the following summary:

	tons.	at the cost of
Reduced estimate of nine towns in Columbia county, -	15,250	$54,252
Estimate of Berkshire, -	41,962	212,314
Reduced estimate of Dutchess county, - - - -	13,556	48,224
Litchfield county, estimated at ¾ of Berkshire, - -	31,472	159,236
Putnam co., partial estimate,	7,000	28,000
Fairfield county, - -	7,000	28,000
Westchester county, estimated equal to Putnam and Fairfield, - - - -	14,000	56,000
	130,240	$586,026

We have thus a total of 130,240 tons now transported annually at the expense of 586,026 dollars. Supposing this to be a proper estimate on the present business of this section of country, the inquiry arises, how much transportation would accrue to the railway when completed, and at what prices?

In answering these important questions it may be proper to suggest, that much of this business now pays an additional freight on the Hudson, a portion of which will be saved to the railway by passing direct to New-York; that although the railway prices must be lower for the same distance than is now paid for transportation on common roads, still the increased mileage in passing to that city will more than compensate for the decrease in price. The effect of the railway will also be to greatly multiply the amount of products transported, so as to preserve, if not increase the gross amount now paid for transportation. Besides this, the general increase of business which may be expected to occur before the period can arrive at which the railway will be opened, especially with the stimulus of the railway in prospect, may be supposed, of itself, more than sufficient to make good the above amount to the railway. Some facts relating to the increase of business in Berkshire will show this in a strong light. About the year 1826 an examination was made into the amount of transportation then afforded by that county, in reference to an extension of the Sharon canal through the rich valley of the Housatonic. It was found that its transportation was then performed at the annual expense of about 100,000 dollars, and the committee who instituted the inquiries ventured to predict, that, with the aid of the facilities which a canal would afford, this amount would be doubled in six years. Since those inquiries were made, six years have elapsed, and, withont the aid of the contemplated canal, the transportation now exceeds 200,000 dollars, and intelligent persons in that county, who are conversant with its industry and statistics, avow their belief that with the facilities which a railway on that route might afford, the present amount would be quadrupled in another equal period.

We shall therefore be fully justified in assuming an amount of transportation in the first years of the railway operations, equal to the summary above recited. Lest, however, we should appear too sanguine, and to remove all possible objections, we will deduct 40 *per cent.* from the foregoing estimate of transportation, which reduces the amount to 351,616 dollars.

We come next to the estimate of the *passengers* which would be afforded to the railway from the same district of country, and in making this inquiry we are obliged to proceed on data less precise than that which has governed our estimate of heavy transportation. We are, notwithstanding, in less danger of overrating the subject, for all past experience has shown that the travel in this country, particularly on routes connected with its commercial metropolis increases annually, in a ratio far beyond that of its business or population, and in no case is this increase so high as when connected with the establisnment of steamboats and railroads.

In twelve towns in Berkshire, the passengers to and from the Hudson are estimated as now paying an amount of $10,720 annually. But the estimate is made on the present residents in these towns, not including transient visiters, and with the increase which will accrue in five years, together with the vast multiplication of travel which the railway will occasion, and the increase of mileage in the transit of a great portion of these passengers to the extreme points of the route, it will be fair to estimate the amount from this source from these twelve towns, on the opening of the railway, at $30,000 annually, and the travel of the whole county at $60,000. Nor will this estimate appear exaggerated when we consider that the most productive business of a railway is found to consist in the conveyance of passengers.

We will however estimate the travel of Berkshire county as producing annually to the railway the sum of - - -	$10,000
Litchfield county - - - -	30,000
Columbia, (including winter travel,)	20,000
Dutchess - - - - -	20,000
Putnam - - - - -	12,000
Fairfield - - - - -	12,000
Westchester - - - - -	18,000
	$152,000

We now devote our attention to that part of the travel to and from the intermediate points on the railway, which is furnished from the cities and counties which are situated at its northern and southern terminations. This important part of the estimate must begin with the city of New-York, which will possess in this railway, if we except the Hudson river, its most interesting and frequented channel of intercourse with the country. Thousands of its citizens will be induced to seek, through this accommodation, a respite from the cares of business, in the rural scenery and free air of the country, which will court their enjoyment. Thousands also of the strangers who visit the metropolis will be attracted by these inducements, and the exhibitions of manufacturing and mechanical skill which this enterprising country affords, to visit places and objects in the vicinity of the railway. To form a just view of the amount of this intercourse, we need but remember that the resident population of the city in 1830 exceeded 207,000 persons, that it is now equal to at least 225,000, and that its real and personal estate is valued at $139,280,214. Brooklyn, which is but an extension of the city, had in 1830 a population exceeding 15,000, which is rapidly increasing, and its valuation is near 7,000,000 of dollars.

At the northern termination of the route we have the flourishing cities of Albany and Troy, a large portion of whose citizens are natives of New-England, who maintain a constant intercourse, both mercantile and social, with the land of their fathers; and if we look beyond these limits to the north and to the west, we find the same relations existing, and a corresponding frequency of intercourse, which must needs contribute largely to the resources of the railway. The valuation of Albany county is $12,739,690. Its population in 1830 was 53,537. Valuation of real and personal estate in Rensselaer county, including Troy, $9,615,392; population 49,472.

It is highly probable that this description of travel to and from the intermediate portions of the route will equal that which is furnished by the intermediate country itself, amounting, as we have seen, to 152,000 dollars, and making a total of 304,000 dollars, a sum, it will be perceived, which is still below the estimated transportation of the same country. In compliance, however, with our former rule of caution, we will reduce this amount to 200,000 dollars.

We have thus an aggregate of 200,000 dollars for the entire intermediate travel of the railway, and which includes not only all which is properly afforded by the counties which are intersected, but also all the intermediate or way travel which emanates from the county of Rensselaer, and the cities of Albany and Troy, on the north, and the city of New-York on the south. Nor can we think this item to be overrated, for, on comparing it with the known amount of travel on stage routes through less important districts, it would evidently justify a larger estimate.

We come now to consider the probable income of the railway, from the business passing from the extreme points through the entire length of the railway, and will first attempt an estimate of that which will pass in the winter months, say an average of three months in each year.

Although the amount of travel between New-York and Albany by the post-road, at this season of the year, is comparatively small, yet all must be convinced that, under the operation of the railway, the business and travel would not only be greatly increased but more equally diffused through the different seasons. During the season of navigation not fewer than eight steamboats pass daily on the Hudson through the entire route. One boat is said to have carried 25,000 passengers annually on an average of past years, and some boats have much exceeded this number. If we allow a season of 35 weeks, and six passages per week, it will give 112 passengers per day for each boat, or an average of near 900 per day, and we may safely allow 75 per day, in each direction, as the average of the long travel in the winter months, when intercourse shall be established by a railway. This number, at five dollars each, which would be a moderate winter price, will amount to 58,500 dollars. This average may seem too small, and doubtless is so, but it must be remembered that we have previously estimated all the travel to intermediate points on the route. The amount of property to be carried through by the railway cannot be so satisfactorily ascertained, but as the railway will form the sole channel of communication between New York and the interior at that season, and will greatly facilitate commercial exchanges, we will assume the amount of the winter transportation to be equal to the foregoing item, or 58,500 dollars. To this may be added, for light articles transported at other seasons of the year, $12,500.

There remains but one other source of income to be estimated, which is that arising from the long travel in summer, or that which passes through the entire length of the railway during the season of navigation, and which, as has been premised, is not mainly relied upon in calculating its profit or utility. It would be a mistake, however, to infer that no income will be derived from this source. The nature of the case, as well as past experience, shows that an increase of the means and facilities of conveyance always increases travel, and that many travellers will be drawn to the railroad from motives of interest or curiosity, and still greater numbers from considerations of convenience or a desire of change, so that a considerable portion of what is called *pleasure travel*, as well as of the men of business, will be induced to pass in one direction by the steamboats, and in the other by the railway.

If the number of passengers which now pass daily in the steamboats, between the extreme points of the route, be reckoned at 800 on an average of six days to the week, they may, at the expiration of six years from the present period, be safely estimated at 1200 per day. Perhaps one-third of the number would be induced to take the railroad, but we will allow 150 per day, in each direction, as the average of the long travel by the railway at the period of its completion, which in a season of 38 weeks, reckoned at 6 days in a week, gives 68,400 passengers, which, at $2,50 each, will be 171,000 dollars. These amounts require no reduction.

We present the following recapitulation:

Estimated transportation of the country connected with the railway, less 40 per cent.	$351,616
Winter freights	58,500
Other light freights	12,500
Reduced estimate for way travel pertaining to the route, and also from the cities and other parts of the country	200,000
Winter passengers through the entire route	58,500
To which may be added the estimate for passengers through the entire route, during the season of navigation	171,000
Total estimate of annual income	$852,116

It may be seen, from the statistics already given, that the valuation of real and personal estate in the cities and counties, at the termination of the railway, or intersected by it, amounts to about two hundred millions of dollars, without including the adjacent counties of Connecticut and Massachusetts. The whole valuation of the State of New-York is about 365 millions; so that more than one-half of the interest of the state is immediately connected with the interest of the railway. If it should be said that the intermediate river towns ought not to be included, we answer, that they are necessarily dependent upon its operations in winter, and that it is also connected in some degree with the interests of every other portion of the state, and especially with its interior districts.

The above calculations are founded chiefly on the present amount of business. It should be remembered, they include nothing for the transportation of wood, coal, hay, animals of any sort, or daily supplies for the New-York market, nor for the transportation of the mails, although the railway would necessarily form a portion of the great mail route, not only from New-York to the eastern States, but from the same States to Albany and the great West.

But it may now be asked, is the route proposed for this railroad sufficiently practicable! What will be the cost of the work, and what its annual expenses when completed? Have railroad a decided superiority over other means of intercourse? And is not the construction of a long line of railroad through an agricultural or manufacturing country a hazardous enterprise? These are important questions, and deserve a satisfactory answer.

A considerable part of the route proposed for this railroad has been thoroughly examined and surveyed, for the location of the Sharon canal, and is known to be, for the most part, highly favorable in its character. During the past autumn, a committee was appointed to collect topographical information, in relation to the entire route, at the head of which was Benjamin Wright, Esq. a distinguished Civil Engineer, who, at a former period, had directed the canal surveys, and whose talent and experience, aided by an intimate acquaintance with that section of country, entitle his opinions to the fullest confidence. The report of this committee will be found annexed, and may be deemed a sufficient answer to the first inquiry, till the engineers of the company shall have decided on the specific location of the railway.

The *cost* of the railway must depend essentially upon the character of the route through which it is to pass, the nature of the obstacles to be overcome, the style or manner in which it may be constructed, and the practical intelligence of those to whose guidance its plans and operations may be committed. The Chesapeake and Delaware canal has cost an average of 161,600 dollars per mile. The Pennsylvania state canals about 28,000 dollars per mile; and some portions of the latter have cost 100,000 dollars per mile. The New-York State canals are admitted to have cost upwards of 22,000 dollars per mile. So of railways. The Liverpool and Manchester railway of 32 miles, has cost upwards of 800,000 pounds sterling. But if we deduct 50,000 pounds for Parliament and law expenses, 100,000 pounds for a tunnel of 1⅓ miles under the town of Liverpool, a large amount for deep and extensive rock cutting—expensive viaducts of solid masonry—long and heavy embankments over deep morasses—and heavy disbursements for the sequestration of valuable lands—we shall reduce the cost to an amount by no means alarming. But with all this accumulated expense, and a limit of 10 per cent. profit, which is imposed by its charter, the stock of this railway continues steady at an advance of more than 100 per cent., and the business of the road is rapidly increasing. The first six miles of the Baltimore and Ohio railroad, graded in an expensive manner, on a difficult route, has cost an average of about 60,000 dollars a mile, while the greater part of the road to the Blue Ridge, and the portion which is to extend over the Alleghanies, is admitted to cost but little more than $20,000 a mile, completed with a double track. The various rail-roads in Pennsylvania are stated to have cost from $2,000 to 25,000 per mile. The railroad from Albany to Schenectady, owing to various causes will exceed, it is said, an average of 30,000 dollars per mile; while that from Schenectady to Saratoga, formed with a single set of tracks and including a portion of heavy work, will cost but little more than 9000 dollars per mile. The railroad from Charleston, S. C. to Augusta, Geo. a distance of 135 miles, which is now in a state of forwardness, it is said will cost 6,500 dollars a mile.

The Saratoga and Schenectady railway, will afford the best data from which to estimate the cost of the New-York and Albany road. Three-fourths of the route of the latter may, in the present state of our information, be deemed of easy construction; the remaining fourth as moderately difficult. The entire distance being supposed equal to 160 miles, we have 120 miles at 9000 dollars per mile, for a single track; and which, to cover contingencies, may be put at 10,000 dollars, amounting to 1,200,000 dollars. We have remaining 40 miles, at the supposed average of 15,000 dollars per mile, amounting to $600,000, making in the whole 1,800,000 dollars.

Those persons who are familiar with the history and progress of railroads in this country, will generally unite in the opinion, that in most cases it is not expedient to establish a double line of tracks until the use of a single track has been sufficiently productive to justify the additional expenditure. In the present case, however, the great importance of the road, and the known resources on which it can rely for support, will justify the adoption in the first instance, of a grading and masonry adapted to a double set of tracks. This will probably increase the outlay at the rate of about 1,800 dollars per mile, equal to 288,000 dollars, which swells the cost to 2,088,000 dollars. To this may be added 212,000 dollars for locomotive engines, carriages, sheds, and the usual paraphanalia of a great carrying establishment; making a total amount of 2,300,000. The laying of a second set of tracks would probably require the balance of three millions of dollars; and to provide for such an enlargement of the work, or for any other emergency, this sum may be fixed as the amount of the capital. This sum is predicated on a scale of strict economy in the expenditure, and as a railway, considered in reference to the future growth of the country, is a progressive work, a larger capital may ultimately be employed. The annual interest on three millions, at 6 per cent. is $180,000.

The annual expenses of maintaining the establishment cannot be ascertained with certainty; but the experience which has been derived from the railroads in this country and in Europe affords a criterion by which these expenses may be safely estimated. We have seen that the estimated receipts for freight are stated at 422,616 dollars, on which it is usual to allow half for the expenses attending its transportation, which leaves 211,308 dollars as the nett product of this branch of the railway business. The estimate for passengers is 429,500 dollars, on which it is usual to allow 1-5 to 1-3 for expenses; but to cover all charges for oversights in our estimates, or for other unknown contingencies, and to make good any deficiency or excess of expenses which may possibly occur in the other branch of the estimates, we will appropriate half of the receipts for passengers to meet the expenses, which leaves for a nett product a moiety of the whole estimate, or 426,058 dollars. From this sum we will make a further deduction of 66,058 dollars for annual repairs, if the same be not covered by our previous liberal allowances, which leaves us a supposed annual surplus or profit of 360,000 dollars, being equal to a dividend of twelve per cent. on a capital of three millions.

In estimating the value of railroads it should be borne in mind, that a railway which produces a nett income or dividend of 6 per cent. in the first years of its operations, will be considered as good property, for the gradual increase of business which must ensue will increase the annual profits in a geometric ratio. In the mean time the proprietors are exempt from that universal, and often ruinous competition which stages, steamboats, and merchant vessels, are usually compelled to sustain. The railway is also perfectly adapted to any further improvements in the means of locomotion which may chance to be introduced, whilst its almost imperishable character is in striking contrast with the perishable nature of those vehicles which constitute the usual means of conveyance.

Still, doubts are often expressed of the real superiority of railroads over canals and other means of conveyance, and from sources that would seem entitled to respectful consideration. Without advancing more on this head, it is sufficient to say, that of two admitted advantages, among all others which have been named as pertaining to railroads, either is deemed sufficient to give a decided preponderance in their favor. The first of these advantages is celerity and despatch. Time is money, or rather is an element which necessarily enters into the estimate of the cost or advantage of every transit which is made of person or property. The second, is that of free intercourse in adverse or inclement seasons of the year, when all other means of conveyance are embarrassed or interrupted.

We will add on this subject the testimony of one of the most cautious and experienced engineers in Great Britain, whose opportunities of forming correct opinions on this subject have not been surpassed by those of any other individual.

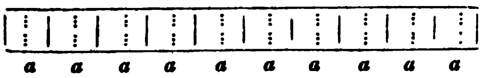
"The question that railways are fitted for the conveyance of general merchandize, has been decided in the most conclusive and practical manner. Being applicable at greater rates of speed than by any other mode, not only for the conveyance of passengers, but also for general merchandize, has affixed a value to railroads possessed by no other means of conveyance. Uniting the several qualities of being alike adapted for the transit of light and heavy goods, and the conveyance of passengers, will unquestionably lead to the substitution of railways for other modes, not possessing such properties, in all cases where the extent of traffic is such as to justify the out-lay of capital necessary for their construction."—(Wood on Railroads, 2d edition, 1831.)

There remains in concluding our inquiries, but one point to be examined. Is not the construction of a long line of railroad, through an agricultural or manufacturing country, an uncertain or hazardous enterprize?

It is often said that those railroads only can be profitable which are of moderate extent, and which unite great cities or thoroughfares, and the case of the Liverpool and Manchester Railroad is often referred to as a case in point. This idea or objection is by no means new. It was urged with great confidence against the construction of the Erie Canal, and ruin was confidently predicted to the finances of the state, should the legislature embark its interests in that mad adventure. The example of this canal may be referred to with more safety than that of the Liverpool Railway, and it proves that the true principles on which the success of these works depend have been mistaken by the objectors, and that, other things being equal, the success or profit of a line of canal or railway depends very much upon its extension, and that the value increases with the length in a geometric ratio. This matter is generally understood by our civil engineers, and it is admitted that in penetrating a secluded country, although the distant portions of the work may, if separately considered, fail to remunerate for their construction, yet the increased mileage of the remote trade on the more frequented portions of the work will more than compensate for the deficiency.

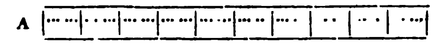
The importance of this view of the subject, and its bearing upon the interests of the proposed railway, which is to lead from the city of New-York towards the interior of our country in another direction,* induces a more specific examination of the question under review.

In order to give a correct illustration, we will suppose ten separate districts of country of equal dimensions, and furnishing an equal amount of tonnage or passengers, each district to be intersected through its geographical centre by a railway leading to a market on one of its borders, at the point *a*, as marked on the annexed diagram :



We will, for the sake of numerical exactness, further suppose these districts to be each ten miles square, and the equal products or travel of each to be drawn to the several railways at points which shall average the mileage at that which is the common centre of each district. It is obvious that the average distance which the products will be carried on each railway, is five miles; and if the total amount of tonnage or passengers be 5,000 in each district, it will, at one dollar per ton or passenger for this distance, amount to 5,000 dollars. If we now take the aggregate of the ten railroads in the several districts, estimated by the same rule, the aggregate compensation or income for the 100 miles of railroad will amount to $50,000. This is a fair exhibition of the operation of railways in single isolated districts, each leading to its separate local market.

We will now examine the effect of a continuous railway through the same number of districts of like dimensions, and furnishing a like amount of tonnage or passengers, the entire length of railway being the same as before, but leading to a common market at the termination of the tier of districts, as at A. in the following diagram :



It is here evident, that the tonnage or passengers of each district will pass the same average number of miles in the district as in the former case, but mark the difference which follows. The tonnage of the district nearest to the market at A. will reach its destination in travelling an average of five miles from the common centre of the district; but the products of the second district, after travelling the same distance, must pass through the entire length of the first district, or an average distance of 15 miles, and the tonnage of the third district must pass in its turn 25 miles: and the same ratio of increase will apply to all the remaining districts, producing the following results:

					cost of transportation.
From 1st dis.	to market	at A.	estimated	5 miles, ...	$5,000
2d do.	do.	do.		15 do.......	15,000
3d do.	do.	do.		25 do.......	25,000
4th do.	do.	do.		35 do.......	35,000
5th do.	do.	do.		45 do.......	45,000
6th do.	do.	do.		55 do.......	55,000
7th do.	do.	do.		65 do.......	65,000
8th do.	do.	do.		75 do.......	75,000
9th do.	do.	do.		85 do.......	85,000
10th do.	do.	do.		95 do.......	95,000
					$500,000

Thus it appears that the amount of income or compensation derived from the same amount of tonnage or passengers, from the same number of districts, on a continuous railway of the same aggregate extent, but leading through the several districts in succession to a common market, will amount to $500,000, being *ten times* the amount which the same business will afford on ten local railways of ten miles each, while from the more simple economy in the superintendance and management of the longer route, the aggregate expenses would be but little increased.

We find, therefore, that extended lines of communication, leading from great markets towards the interior, are by far the most profitable, especially in a country of such wide extent as our own, and it is only the converse of the objection that holds true, viz.: That *short* lines of railway or canal cannot be made profitable in this country, unless in uniting important cities or great lines of communication.

It is these obvious considerations which have given such value to the Erie Canal. Had this great work been restricted to one-fourth of its present length, in its extension from the Hudson, it would probably have remained an annual burden upon the finances of the state, instead of imparting, as it now does, happiness, wealth, enterprize, and confidence, throughout our widely extended and prosperous community.

The time will soon arrive when the subscriptions for the stock of the New-York and Albany Railroad will be open to the public. After the company shall have been organized, the surveys and other necessary arrangements for the final location and execution of the work will protract the time at which the directors will commence calling in the instalments for one or two years longer, and we may then expect to see the work in active progress. The Legislature of Massachusetts during its last session passed an act giving corporate powers for the construction of the railway or its branches in the county of Berkshire; and by connecting with the Harlæm Railroad, provision is already made for its extension into the heart of our great commercial city.

RAILROAD.—Extract from the log-book of a gentleman who left New-York on Thursday last for Baltimore. Left New-York at 6. 10, arrived at Amboy at 8. 21. Left Amboy at 8. 31, and arrived at Bordentown at 12. 8. Left at 12. 11, and arrived at Philadelphia at 2. 36. Left Philadelphia at 3. 16, arrived at New Castle at 6. 15. Left at 6. 21, and arrived at Frenchtown 7. 21. Left at 7. 53, and arrived at Baltimore at 12. 35. A considerable time lost in changing horses between Amboy and Bordentown. The distance from New Castle to Frenchtown, 16½ miles, which was performed in one hour, besides having made two stops on the route for the steam to go off *pish, pish*, at the cows, which were on the road. In one instance the boy who drove the cows was more frightened than the cattle: he ran one way and the cattle the other.—[Com. Adv.]

[*From the Frederick (Md.) Examiner, of 26th June.*]

RAILROAD AND CANAL.—Philip E. Thomas, Esq. President of the Railroad Company, and John Eaton, Esq. President of the Canal Company, accompanied by a committee of the Directors of each Company, visited the Point of Rocks, on Wednesday last, for the purpose of instituting measures to carry into effect the compromise for the passage of both works round the Point of Rocks. We have heard that the best disposition to accommodate all differences upon the subject was evinced, and that the two works will probably now progress in harmonious co-operation.

Rafts and Canal Navigation.—The great quantity of timber which is brought into the Erie canal, in rafts, by the opening of the Oswego and Cayuga and Seneca canals, has produced so much detention at the locks, during the press of business for several weeks since the opening of navigation, as to call for some effort to relieve this inconvenience hereafter, either by the construction of double locks, or such regulations as will induce the lumbermen to transport their rafts during the summer months, intermediate between the press of business on the canal in the spring and fall.

The attention of the public officers who have charge of the canals has been called to this subject, and we are authorized by the Comptroller to say, that the Canal Board, at an informal meeting on the 17th inst., took into consideration the transportation of timber in rafts on the Erie and Champlain canals, and the present rates of toll on lumber transported in that manner; and that such of the members of the board, as were present, entertain the opinion that some new regulations on this subject will the next year become indispensable. They are not now prepared to say what particular measure will be adopted; but it is not improbable that on timber transported in rafts during the spring and fall, when the canal is thronged with boats, the owners of rafts will be required to diminish the number of cribs in a ton, and to increase the number of hands, so that each crib shall be in the immediate custody of some person, and so managed as not unnecessarily to impede the navigation of boats; in addition to this the tolls on rafts navigating the canals in the spring and fall may be increased. In order to relieve the rafts from the effects of these restrictions, and to present the strongest inducements for their transportation during that part of the season when the canal is not crowded with boats, it is proposed to reduce the tolls on all rafts transported during three months in the middle of the season.

This notice is given in order that those who feel an interest in this subject may have timely notice of the probable change in the tolls and regulations, and may make their business arrangements with reference to those alterations.—[Albany Argus.]

MARKET FOR COCOONS.—The American Farmer states that a silk filature is about to be established in Baltimore, and that Mr. Hitchcock, proprietor of that paper, is authorised to purchase cocoons at twenty-five to fifty cents per pound, according to their quality.

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* The New-York and Erie Railroad, through the northern line of counties.

A few Remarks on the Relation which subsists between a Machine and its Model. By Edward Sang, Teacher of Mathematics, Edinburgh.

At first sight, a well constructed model presents a perfect representation of the disposition and proportion of the parts of a machine, and of their mode of action.

Misled by the alluring appearance, one is apt, without entering minutely into the inquiry, also to suppose that the performance of a model is, in all cases, commensurate with that of the machine which it is formed to represent. Ignorant of the inaccuracy of such an idea, too many of our ablest mechanicians and best workmen waste their time and abilities on contrivances, which, though they perform well on the small scale, must, from their very nature, fail when enlarged. Were such people acquainted with the mode of computing the effects, or had they a knowledge of natural philosophy, sufficient to enable them to understand the basis on which such calculations are founded, we should see fewer crude and impracticable schemes prematurely thrust upon the attention of the public. This knowledge, however, they are too apt to regard as unimportant, or as difficult of attainment. They are startled by the absurd distinction which has been drawn between theory and practice, as if theory were other than a digest of the results of experience; or, if they overcome this prejudice, and resolve to dive into the arcana of philosophy, they are bewildered among names and signs, having begun the subject at the wrong end. That the attainment of such knowledge is attended with difficulty is certain, but it is with such difficulty only as can be overcome by properly directed application. It would be, indeed, preparing disappointment to buoy them up with the idea, that knowledge, even of the most trivial importance, can be acquired without labor. Yet it may not be altogether unuseful, for the sake both of those who are already, and of those who are not, acquainted with these principles, to point out the more prominent causes, on account of which the performance of no model can, on any occasion, be considered as representative of that of the machine. Such a notice will have the effect of directing the attention, at least, to this important subject. In the present state of the arts, the expense of constructing a full-sized instrument is, in almost every instance, beyond what its projector would feel inclined, or even be able, to incur. The formation of a model is thus universally resorted to, as a prelude to the attempt on the large scale. An inquiry, then, into the relation which a model bears to the perfect instrument, can hardly fail to carry along with it the advantage of forming a tolerable guide, in estimating the real benefit which a contrivance is likely to confer upon society.

In the following paper I propose to examine the effect of a change of scale on the strength and on the friction of machines, and, at the same time, to point out that adherence to the strictest principles which is apparent in all the works of nature, and of which I mean to avail myself in fortifying my argument.

Previous, however, to entering on the subject-proper, it must be remarked that, when we enlarge the scale according to which any instrument is constructed, its surface and its bulk are enlarged in much higher ratios. If, for example, the linear dimensions of an instrument be all doubled, its surface will be increased four, and its solidity eight-fold. Were the linear dimensions increased ten times, the superfices would be enlarged one hundred, and the solidity one thousand times. On these facts, the most important which geometry presents, my after-remarks are mostly to be founded.

All machines consist of moveable parts, sliding or turning on others, which are bound together by bands, or supported by props. To the frame work I shall first direct my attention.

In the case of a simple prop, destined to sustain the mere weight of some part of the machine, the strength is estimated at so many hundred weights per square inch of cross section. Suppose that, in the model, the strength of the prop is sufficient for double the load put on it, and let us examine the effect of an enlargement, ten-fold, of the scale according to which the instrument is constructed. By such an enlargement, the strength of the prop would be augmented 100 times; it would be able to bear 200 loads such as that of the model, but then the weight to be put on it would be 1000 times that of the small machine, so that the prop in the large machine would be able to bear only the fifth part of the load to be put on it. The machine, then, would fall to pieces by its own weight.

Here we have one example of the erroneous manner in which a model represents the performance of a large instrument. The supports of small objects ought clearly to be smaller in proportion than the supports of large ones. Architects, to be sure, are accustomed to enlarge and to reduce in proportion; but nature, whose structures possess infinitely more symmetry, beauty, and variety, than those of which art can boast, is content to change her proportions at each change of size. Let us conceive an animal having the proportions of an elephant and only the size of a mouse; not only would the limbs of such an animal be too strong for it, they would also be so unwieldy that it would have no chance among the more nimble and better proportioned creatures of that size. Reverse the process, and enlarge the mouse to the size of an elephant, and its limbs, totally unable to sustain the weight of its immense body, would scarcely have strength to disturb its position even when recumbent.

The very same remarks apply to that case in which the weight, instead of compressing, distends the support. The chains of Trinity Pier are computed to be able to bear nine times the load put on them. But if a similar structure were formed of ten times the linear dimensions, the strength of the new chain would be one hundred times the strength of that at Trinity, while the load put upon it would be one thousand times greater; so that the new structure would possess only nine-tenths of the strength necessary to support itself. Of how little importance, then, in bridge building, whether a model constructed on a scale of perhaps one to a hundred support its own weight! Yet, on such grounds, a proposition for throwing a bridge of two arches across the Forth, at Queensferry, was founded. Putting out of view the road-way and passengers altogether, the weight of the chain alone would have torn it to pieces. The larger species of spiders spin threads much thicker, in comparison with the thickness of their own bodies, than those spun by the smaller ones. And, as if sensible that the whole energies of their systems would be expended in the frequent production of such massy webs, they choose the most secluded spots; while the smaller species, dreading no inconvenience from a frequent renewal of theirs, stretch them from branch to branch, and often from tree to tree. I have often been astonished at the prodigious lengths of these filaments, and have mused on the immense improvement which must take place in science, and in strength of materials too, ere we could, individually, undertake works of such comparative magnitude.

When a beam gives support laterally, its strength is proportioned to its breadth, and to the square of its depth conjointly. If, then, such a beam were enlarged ten times in each of its linear dimensions, its ability to sustain a weight placed at its extremity would, on account of the increased distance from the point of insertion, be only one hundred times augmented, but the load to be put upon it would be one thousand times greater; and thus, although the parts of the model be quite strong enough, we cannot thence conclude that those of the enlarged machine will be so.

It may thus be stated as a general principle, that, in similar machines, the strengths of the parts vary as the square, while the weights laid on them vary as the cube of the corresponding linear dimension.

This fact cannot be too firmly fixed in the minds of machine makers; it ought to be taken into consideration even on the smallest change of scale, as it will always conduce either to the sufficiency or to the economy of a structure. To enlarge or diminish the parts of a machine all in the same proportion, is to commit a deliberate blunder. Let us compare the wing of an insect with that of a bird: enlarge a midge till its whole weight be equal to that of the sea-eagle, and, great as that enlargement must be, its wing will scarcely have attained the thickness of writing paper; the falcon would feel rather awkward with wings of such tenuity. The wings of a bird, even when idle, form a conspicuous part of the whole animal; but there are insects which unfold, from beneath two scarcely perceived covers, wings many times more extensive than the whole surface of their bodies.

The larger animals are never supported laterally; their limbs are always in a position nearly vertical: as we descend in the scale of size the lateral support becomes more frequent, till we find whole tribes of insects resting on limbs laid almost horizontally. The slightest consideration will convince any one that lateral or horizontal limbs would be quite inadequate to support the weight of the larger animals. Conceive a spider to increase till his body weighed as much as that of a man, and then fancy one of us exhibiting feats of dexterity with such locomotive instruments as the spider would then possess!

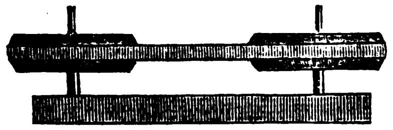
The objects which I have hitherto compared have been remote, that the comparisons might be the more striking; but the same principles may be exhibited by the contrast of species the most nearly allied, or of individuals even of the same species. The larger species of spiders, for instance, rarely have their legs so much extended as the smaller ones; or, to take an example from the larger animals, the form of the Shetland poney is very different from that of the London dray horse.

How interesting it is to compare the different animals, and to trace the gradual change of form which accompanies each increase of size! In the smaller animals, the strength is, as it were, redundant, and there is room for the display of the most elaborate ornament. How complex or how beautiful are the myriads of insects which float in the air, or which cluster on the foliage! Gradually the larger of these become more simple in their structure, their ornaments less profuse. The structure of the birds is simpler and more uniform, that of the quadrupeds still more so. As we approach the larger quadrupeds, ornament, and then elegance, disappear. This is the law in the works of nature, and this ought to be the law among the works of art.

Among one class of animals, indeed, it may be said that this law is reversed. We have by no means a general classification of the fishes; but, among those with which we are acquainted, we do not perceive such a prodigious change of form. Here, however, the animal has not to support its own weight; and whatever increase may take place in the size of the animal, a like increase takes place in the buoyancy of the fluid in which it swims. Many of the smaller aquatic animals exhibit the utmost simplicity of structure; but we know too little of the nature of their functions to draw any useful conclusions from this fact.

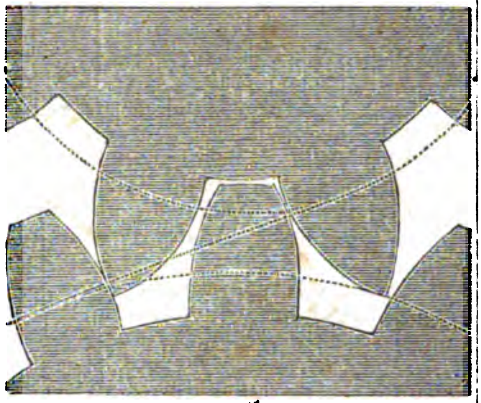
Of Wheel Work.—In treating of the simple mechanical power, called the wheel and axle, (see The Artisan, vol. i. p. 86), we stated that motion was communicated from one wheel to another, either by belts and straps passing over them, or by teeth cut in the circumference of each, and working in one another. We shall now enter a little more fully into the subject and endeavor to explain some of the most useful principles upon which this branch of practical mechanics depends, and also to point out the various methods of applying this mechanical power in the motion of different kinds of machinery.

Where a broad strap runs on a wheel, it is usually confined to its situation, not by causing the margin of the wheel to project, but, on the contrary, by making the middle prominent, as represented by the following wheel or pulley, on which a broad strap runs, the surface being convex; the wheel which drives it is of a similar form but its upper part only is shown in the figure.



The reason of the middle being made prominent may be understood by examining the manner in which a tight strap, running on a cone, would tend to run towards its thickest part. Sometimes also pins are fixed in the wheels, and admitted into perforations in the straps; a mode only practicable where the motion is slow and steady. A smooth motion may also be obtained, with considerable force, by forming the surfaces of the wheels into brushes of hair. More commonly, however, the circumferences of the contiguous wheels are formed into teeth, impelling each other, as with the extremities of so many levers, either exactly or nearly in the common direction of the circumferences; and sometimes an endless screw is substituted for one of the wheels.

In forming the teeth of wheels, it is of consequence to determine the curvature which will produce an equable communication of motion with the least possible friction. For the equable communication of motion, two methods have been recommended; one, that the lower part of the face of each tooth should be a straight line in the direction of the radius, and the upper, a portion of an epicycloid; that is, of a curve described by a point of a circle rolling on the wheel, of which the diameter must be half that of the opposite wheel; and in this case it is demonstrable, that the plane surface of each tooth will act on the curved surface of the opposite tooth, so as to produce an equable angular motion in both wheels: the other method is, to form all the surfaces into portions of the involutes of circles, or the curves described by the point of a thread which has been wound round the wheel while it is uncoiled; and this method appears to answer the purpose, in an easier and simpler manner than the former. The following figure represents the teeth, &c. of two wheels, formed into involutes of circles, described by uncoiling a thread from the dotted circles; the point of contact of the teeth being always in the straight line, which touches both circles.



It may be experimentally demonstrated, that an equable motion is produced by the action of these curves on each other; if we cut two boards into forms, terminated by them, divide the surfaces by lines into equal or proportional angular portions, and fix them on any two centres, we shall find that, as they revolve, whatever parts of the surfaces may be in contact, the corresponding lines will always meet each other.

Both of these methods may be derived from the general principle, that the teeth of the one wheel must be of such a form, that their outline may be described by the revolution of a curve upon a given circle, while the outline of the teeth of the other wheel is described by the same curve revolving within the circle. It has been supposed by some of the best officers, that the epicycloidal tooth has also the advantage of completely avoiding friction; this is, however, by no means true, and it is even impracticable to invent any form for the teeth of a wheel which will enable them to act on other teeth without friction. In order to diminish it as much as possible, the teeth must be as small and as numerous as is consistent with strength and durability; for the effect of friction always increases with the distance of the point of contact from the line joining the centres of the wheels. In calculating the quantity of the friction, the velocity with which the parts slide over each other has generally been taken for its measure; this is a slight inaccuracy of conception, for the actual resistance is not at all increased by increasing the relative velocity; but the effect of that resistance, in retarding the motion of the wheels, may be shown, from the general laws of mechanics, to be proportional to the relative velocity thus ascertained.

When it is possible to make one wheel act on teeth fixed in the concave surface of another, the friction may be thus diminished in the proportion of the difference of the diameters to their sum.

To ascertain the height of a steeple, tower, &c.—Take two sticks of any but equal length, and holding one perpendicular, place one end of the other against its centre, so as to form a right angle with it; having done this, place your eye at the other end; and advance towards, or recede from, the object the height of which you wish to ascertain, until the upper and lower ends of the perpendicular stick shall appear to touch its top and bottom at the same time; then, from the spot on which you stand, measure the distance to the foot of the object, and this will be its exact height.

Architecture.—Of the Orders of Architecture.

The moderns have applied the term order to those architectural forms with which the Greeks composed the façades of their temples.

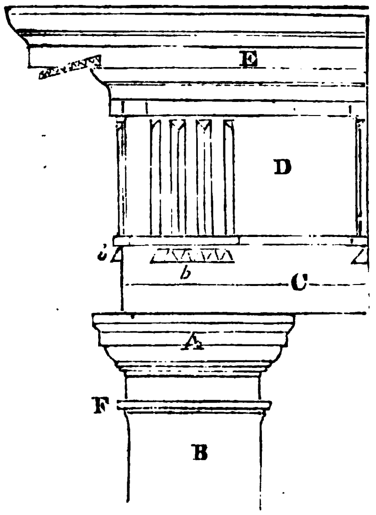
The principal members of an order are, 1st, a platform; 2d, perpendicular supports; and 3d, a lintelling or covering connecting the tops of these supports, and crowning the edifice.

The proportioning of these parts to the edifice and to each other, and at the same time adapting characteristical decorations, constitutes an order, *canon*, or rule.

The principal member of an order is the perpendicular support or *column*. The accompaniments being subservient to this leading feature, the bottom of the column is fixed either on a general artificial platform, or each upon a particular *plinth*, or both. The lower part of the column, which rests upon the square plinth, is sometimes encompassed with mouldings, which, in allusion to their position, are, in conjunction with the plinth, called the *base*.

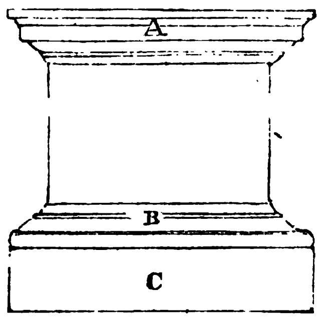
The top part of the column is also covered with a square plinth, with its sides straight or curved, and generally accompanied by circular mouldings or sculptured decorations upon the top part of the column, which is immediately underneath it; this, taken together, is called the capital. The body of the column, which reaches between the base and capital, is termed the *shaft*: it is the frustrum of a cone, with sometimes a plain surface, but frequently having perpendicular flutings, either meeting in an edge or leaving a small plane space between them. The lintelling or covering, which lies upon and connects the column, is termed the *Entablature*, and is sub-divided into three parts, named architrave, frieze, and cornice: the architrave consists of a mere lintel laid along the tops of the columns; the frieze represents the ends of the cross beams resting upon the former, and having the spaces between filled up, having mouldings also fixed to conceal the horizontal joint, and divide it from the architrave; and the upper member or cornice represents the projecting eaves of a Greek roof, showing the ends of the rafters.

These definitions will be easily understood by an inspection of the following figure:



A, the capital—B, shaft—C, architrave—D, frieze—E, cornice.

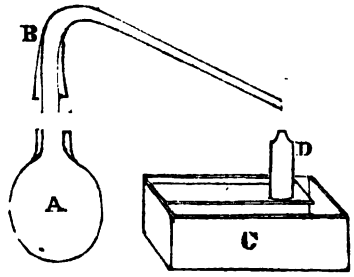
PEDESTAL.



A, the cornice—B, the base—C, the plinth.

History of Chemistry.

Of Oxygen Gas.—Oxygen gas may be obtained by the following process:

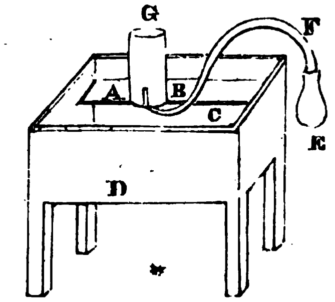


Procure an iron bottle of the shape A, and capable of holding rather more than an English pint. To the mouth of this bottle an iron tube bent like B is to be fitted by grinding. A gun-barrel deprived of its butt end answers the purpose very well. Into the bottle put any quantity of the black oxide of manganese* in powder; fix the iron tube into its mouth, and the joining must be air tight; then put the bottle into a common fire, and surround it on all sides with burning coals. The extremity of the tube must be plunged under the surface of the water with which the vessel C is filled.

This vessel may be of wood or japanned tin plate. It has a wooden shelf running along two of its sides, about three inches below the top, and an inch under the surface of the water. In one part of this shelf there is a slit, into which the extremity of the iron tube plunges. The heat of the fire expels the greatest part of the air contained in the bottle. It may be perceived bubbling up through the water of the vessel C from the extremity of the iron tube. At first the air bubbles come over in torrents; but after having continued for some time, they cease altogether.

Meanwhile the bottle is becoming gradually hotter. When it is obscurely red the air bubbles make their appearance again, and become more abundant as the heat increases. This is the signal for placing the glass jar D, open at the lower extremity, previously filled with water, so as to be exactly over the open end of the gun-barrel. The air bubbles ascend to the top of the glass jar D, and gradually displace all the water. The glass jar D then appears to be empty, but is in fact filled with air. It may be removed in the following manner: Slide it away a little from the gun-barrel, and then dipping any flat dish into the water below it, raise it on the dish and bear it away. The dish must be allowed to retain a quantity of water in it, to prevent the air from escaping. Another jar may then be filled with air in the same manner; and this process may be continued either till the manganese ceases to give out air, or till as many jars-full have been obtained as are required.* This method of obtaining and confining air was first invented by Dr. Mayou, and afterwards much improved by Dr. Hales. All the air obtained by this or any other process, or, to speak more properly, all the airs differing in their properties from the air of the atmosphere, have, in order to distinguish them from it, been called gasses; and this name we shall afterwards employ.†

Oxygen gas may also be obtained in a different manner, thus: Let D represent a wooden trough, the inside of which is lined with lead or tinned copper; and let C be a cavity in the trough, which ought to be a foot deep. The trough is to be filled with water at least an inch above the shelf A B, which runs along the inside of it, about three inches from the top. In the body of the trough, which may be called the cistern, the jars destined to hold gas are to be filled with water, and then to be lifted, and placed inverted upon the shelf at B.



This trough, which was invented by Dr. Priestley, has been called by the French chemists the *pneumato-chemical*, or simply *pneumatic* apparatus, and is extremely useful in all experiments in which gasses are concerned. Into the glass vessel E put a quantity of black oxide of manganese in powder, and pour over it as much of that liquid which in commerce is called *oil of vitriol*, and in chemistry *sulphuric acid*, as is sufficient to form the whole into a thin paste; then insert into the mouth of the vessel the glass tube F, so closely that no air can escape except through the tube. This may be done either by grinding, or by covering the joining with a little glazier's putty, and then laying over it slips of bladder or linen dipped in glue, or in a mixture of the white of eggs and quick-lime. The whole must be made fast with cord.

The end of the tube F is then to be plunged into the pneumatic apparatus D, and the jar G, previously filled with water, to be placed over it on the shelf. The whole apparatus being fixed in that situation, the glass vessel E is to be heated by means of a lamp or candle. A quantity of oxygen gas rushes along the tube F, and fills the jar G. As soon as the jar is filled, it may be slid to another part of the shelf, and other jars substituted in its place, till as much gas has been obtained as is wanted. The last of these methods of obtaining oxygen gas was discovered by Scheele, the first by Dr. Priestley.

The gas obtained by the above processes was discovered by Dr. Priestley on the 1st of August, 1774, and called by him *dephlogisticated air*. Mr. Scheele, of Sweden, discovered it before 1777, without any previous knowledge of what Dr. Priestley had done: he gave it the name of *empyreal air*.* Condorcet gave it first the name of *vital air*; and Mr. Lavoisier afterwards called it *oxygen gas*: a name which is now generally received, and which we shall adopt.

1. Oxygen gas is colorless, and invisible like common air. Like it, too, it is elastic, and capable of indefinite expansion and compression.

2. If a lighted taper be let down into a phial filled with oxygen gas, it burns with such splendor that the eye can scarcely bear the glare of light, and at the same time produces a much greater heat than when burning in common air. It is well known that a candle put into a well closed jar, filled with common air, is extinguished in a few seconds. This is also the case with a candle in oxygen gas; but it burns much longer in an equal quantity of that gas than of common air.

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* This substance shall be afterwards described. It is now very well known in Britain, as it is in common use with bleachers, and several other manufacturers, from whom it may be easily procured.

* For a more exact description of this and similar apparatus, the reader is referred to Lavoisier's *Elements of Chemistry*, and Priestley *on Airs*; and above all, to Mr. Watt's description of a *pneumatic apparatus*, in Beddoe's *Considerations on Factitious Airs*.

† The word gas was first introduced into Chemistry by Van Helmont. He seems to have intended to denote by it every thing which is driven off from bodies in a state of vapors by heat.

* This process, by which the joinings of vessels are made air tight, is called *luting*, and the substances used for that purpose are called *lutes*. The lute most commonly used by chemists, when the vessels are exposed to heat, is fat lute, made by beating together, in a mortar, fine clay and boiled linseed oil. Bees-wax, melted with about one eighth part of turpentine, answers very well, when the vessels are not exposed to heat. The accuracy of chemical experiments depends almost entirely in many cases upon securing the joinings properly with luting. The operation is always tedious; and some practice is necessary before one can succeed in luting accurately. Some very good directions are given by Lavoisier. See his *Elements*, Part iii. chap. 7. In many cases luting may be avoided altogether, by using glass vessels properly fitted to each other by grinding them with emery.

Sinking Wells.—Bishop Heber mention a curious way of sinking wells in some parts of Asia. When the ground is sandy, a cylindrical tower of brick or stone work i. made of the intended size of the well. This is suffered to remain until the masonry becomes indurated, and then it is gradually undermined until it is sunk even with the surface of the ground. If the well is not sufficiently deep, they add more masonry, and again undermine.

Fire Proof Cement.—The French cement for the roofs of houses, to preserve the wood and protect it from fire, is made in the following manner:

Take as much lime as is usual in making a pot full of whitewash, and let it be mixed in a pail full of water; in this put two and a half pounds of brown sugar, and three pounds of fine salt; mix them well together, and the cement is completed. A little lampblack, yellow ochre, or other coloring commodity, may be introduced to change the color of the cement, to please the fancy of those who use it. It has been used with great success, and been recommended particularly as a protection against fire. Small sparks of fire, that frequently lodge on the roofs of houses, are prevented by this cement from burning the shingles. So cheap and valuable a precaution against the destructive element ought not to pass untried. Those who wish to be better satisfied of its utility can easily make the experiment, by using on a small temporary building—or it may be tried by shingles put together for the purpose, and then exposed to the fire.

Water Color for Rooms.—Take a quantity of potatoes and boil them; then bruise and pour boiling water upon them until a pretty thick mixture is obtained, which is to be passed through a sieve. With boiling water then make a thick mixture of whitening, and put it to the potato mixture. To give color, if white is not wanted, add different colored ochres, lampblack, &c. according to circumstances. This paint dries quickly, is very durable, has a good appearance to the eye, and is moreover very cheap.—[London Paper.]

Hamilton's Patent Sawing and Boring Machine.—We have experienced much gratification in examining this useful labor-saving machine; and we are perfectly satisfied that it is destined to be of great public utility in cheapening the price of those articles which are in use by all classes of society, and will at the same time be a source of great profit to the ingenious mechanic who has invented it. We have no means of ascertaining the precise amount of labor and expense which this machine will save, but we venture to hazard the opinion that a man and two apprentices will accomplish more in *twelve* hours than *forty* experienced journeymen can accomplish at the same work during the same period of time. It is withal one of those inventions which require no extraneous aid to bring it into immediate usefulness. The proprietor has commenced working it daily, and in a ware-room adjoining the machine he offers for sale its produce at from thirty to fifty per cent. less than the market price. This simple fact and the certainty that the work is in all its parts more perfect than that manufactured by hand, has produced a demand more than equal to the supply.

The machine is admirably well adapted to any sort of sawing that is usually done by hand or cross-cut sawing. Tenons, mitre-joints, &c. are cut with the greatest precision. In all sorts of pannel work and small framing it will be very useful. It is peculiarly adapted to sawing regular and eccentric circles, such as felloes for wheels, chair tops, seats, legs, and backs, and circular blocks for brushes; and it saws chair teps and seats with great accuracy on a bevel. Each segment of a wheel is cut its proper length and proper inclination for the joint—the holes are bored for the dowels and spokes, and the hubs are bored on a principle entirely new, making every spoke stand with the greatest exactness from the centre to the extreme of the circle. The machine is perfectly simple in its construction, not liable to get out of repair, and easy to manage and understand. A few hours' acquaintance with it will enable any one, whether mechanic or otherwise, to operate on it as well as the inventor. It is only six feet square, and is propelled by a steam engine of two-horse power.

A part of the principle of the same machine is applied to a small portable frame, and used for sawing wood for the fire with astonishing rapidity.—[Courier & Enq.]

Facts in Physics.—Gold beaters, by hammering, reduce gold to leaves so thin that 282,000 must be laid on each other to produce the thickness of an inch. They are so thin, that, if formed into a book, 1500 would occupy the space of a single leaf of common paper.

One pint of water converted into steam fills a space of nearly 2000 pints, and raises the piston of a steam engine with a force of many thousand pounds. It may afterwards be condensed and re-appear as a pint of water.

On the New-York and Erie Railroad. By J. L. Sullivan. [For the American Railroad Journal.]

To the Editor,—It appears to the undersigned that the article in your last number failed to do justice to the great subject of the Railroad from this city to Lake Erie, in some respects. I subjoin a short specification of an improvement in forming the least expensive railway durably.

Permit me to suppose that there is a railroad proceeding from the heart of this city north to Harlaem; that a branch there inclines by Harlaem Valley to the North River, and follows its shore to a crossing to Sloat, in Rockland.

The passage across in winter time can be kept open for steam railway deck ferry-boats, by an application of machinery that I can satisfactorily explain, to break the ice and keep a canal through it open. After reaching Ramapo the route is a gradual ascent of this valley at 12 feet in the mile, to Chester and Florida, 24 miles. From thence, crossing the outlet of the drowned lands, the route gradually ascends to Deer Park Gap, and descends to and crosses the Hudson and Delaware canal; from whence the line follows up the Delaware shore at a gradual ascent to Deposit, where it is nearest the Susquehanna.

By this route it takes up the coal trade at the mouth of Lackawana branch, and carries it to the west, and in the four or five months of winter brings it to this city.

It is evident that no railroad ought to be undertaken unless it will give immediately an ample revenue to stockholders, unless by the State. By this plan (without preventing a branch to the centre of Sullivan county,) a communication will be had with the Susquehanna, also at the junction of the Lackawana, and I know the ground is favorable; and by thus reaching the Upper Delaware and the Upper Susquehanna, so many sources of business are opened that it would be worth while to make it, if it went no further. But now every section will add business, and when the route reaches the head of Alleghany river, the Blanchard steamboats will run from Hamilton to Pittsburg, and at low water to Cincinnati; and the continuation of the road to the Lake opens the trade of the coast of all these inland seas.

The article alluded to speaking of the durability of cheap railroads, I give this explanation of my ideas of the means in 1829, (and have since made some improvement thereon, though preferring durable works where they can be afforded.

J. L. S.

"Specification of an improvement or combination in the art of constructing Railroads, whereby timber employed therein may be increased in durability, viz.:

"In making railroads with timber, the posts or piles are liable to decay earliest at the surface, or a little above and below the surface of the ground, because the effect of heat and moisture there combine.

"To guard the post from this effect, I prevent the contact of earth with this part by means of stone laid close around it; and to keep the rain out from among them, I set them in water-lime-mortar, or in Roman cement, applying it to the wood as well as stones: I also use sometimes, in the upper stratum especially, a cement made of pitch and lime, when the kind of timber is congenial, pitch being adhesive and lime indestructible. In this manner may be used the fragments of the quarry and coarse gravel, to form an artificial rock, surrounding precisely that part which is naturally most exposed to the causes of early decay. The stone keeps the wood cool, the cement keeps it dry.

Again: when the bearing rail is of timber, surmounted with iron plate, the wood is liable to become heated under the iron from the effects of the sun's rays thereon, and to shrink, and the iron rail may be thus loosened, and any composition applied for the purpose of protecting the surface of the timber from sun and rain, may be liable to be worn away by the movement or action of the iron rail under passing pressure. In order to prevent this and to give the iron rail firmness in place and bearing, I give the surface on which it rests the faculty of solid resistance to the pressure of the iron rail, by driving into the wood at least two rows of small nails evenly, their size from one to two inches long, and distance apart according to the weight of load, say about one inch, giving all the nails relative level very near the surface of the bearer. And as the percussion by which nails are driven is a much greater force than the passing pressure of loads, this pressure will not settle the nails deeper in the wood, but they resist it effectually, and prevent the compression of the surface, and the displacement of any defensive composition, as pitch and lime, that may have been applied under the iron plate rail, which will have been drawn firmly into contact with the heads of the nails, by means of the screw bolts and nuts, with which it is fixed on, passing through the timber. A railroad thus constructed is guarded effectually against the working or yielding so prejudicial to durability and good operation.

"And I consider the principle of this improvement as aforesaid to be the combination of water-lime (or Roman) cemented stones surrounding posts or piles, and the nailing the top or bearing surface of timber for effective hardness with railroads."

J. L. Sullivan.

"Philadelphia, April 17, 1829."

NEW-YORK AMERICAN.

JUNE 29, JULY 1, 2, 3, 5—1833.

LITERARY NOTICES.

THE AMERICAN QUARTERLY REVIEW, No. XXVI.; *Philadelphia*, CAREY, LEA & BLANCHARD.—We adverted some time ago to the first paper in this number of the Quarterly, on *Froissart and his Times*, and now propose to call attention to the general merits of the whole. The admirers of chivalry, who see only the romance of the institution, and stop not to reason on the almost barbarian state of society, which the very existence of such an institution implies, will be little gratified, though they may be usefully impressed, by the paper on Froissart, and Mr. Barry St. Leger's just estimate of feudal times, and fetes, and tournaments, and oppressions and ferocities. Art. II, on the Army of the United States, does justice to the gallant little band which passes under that large sounding name, and is right—completely right as it seems to us—in the stand taken in behalf of the preservation of brevet rank. There is a fact stated in this paper worthy of being recalled here; tor, though extensively published we believe at the time, it may not be remembered. It is that of the celerity with which, last summer, on the breaking out of the Indian war, troops were transported from the maritime to the inland frontier. The companies ordered from Old Point Comfort to Mackinaw, accomplished the distance, 1800 miles by the route taken, in 18 days. The military importance of such celerity of movement cannot fail to be appreciated at home and abroad. Art. III, is dedicated to *Captain Morrell's Voyages*, of which it furnishes an abstract, doing justice to the enterprize of the navigator, and lamenting, as we have done before, the unnecessary bulk of the volume. Art. IV is upon fortifications and sieges, and especially the late siege of Antwerp. Art. V reviews justly and favorably Prof. Dunglisson's *Physiology*. Art. VI presents a most attractive notice of what has always seemed to us a most attractive life, that of Sir Humphrey Davy. The great paper, however, of this number, which has so many good ones, is that upon Slavery, and to it we must devote the remainder of this notice.

The momentous topic of Slavery is here treated as a practical, and not an abstract question;—the thing as it is, and not as it should be, is grappled with; and the results at which the writer arrives, as well as the course of his argument, while denoting much personal experience and observation among a slave population, are such as both to encourage and to justify confidence in the ultimate and sure, though probably distant and very gradual, extinction of the evil. Slavery, as at present existing in the United States, is treated as a necessary evil, its endurance for a time as unavoidable, and immediate emancipation as impracticable, and never to be attempted, except through and with the full concurrence of the slave-holder. Mean time—as in a nation, of which one-sixth of the whole population is in a state of slavery, no citizen can stand aloof and declare himself indifferent to the fate, or treatment, or influence, for good or evil, of this portion,—much is to be done towards hastening and adequateiy preparing all parties for the entire eventual removal of slavery. The means to be relied on for this end, as stated with earnestness and ability in the paper under notice, are—1st, *free discussion*—not only in the North, but in the South; 2dly, *religious instruction*—which, in order to avoid the objections of masters to having their slaves taught to read or write—should be oral, and above all, should be conducted by those who, taking the civil condition of the slave as they find it, and leaving it to be ameliorated by those to whom it solely belongs to act in the matter, will confine themselves to his spiritual wants; 3dly, the *Colonization Society:* and 4thly, the *abolition of Slavery in the District of Columbia*. Each of these propositions is developed with considerable detail, and sustained by an array of reason and authorities that cannot be lightly regarded. We wish that this paper may be extensively read at the North and at the South—in the one, that its calm, practical good sense may serve to check the blind zeal of fanaticism—in the other, that the true state of the case, as to the inevitable and irresistible necessity of eventual abolition may be perceived—and that timely measures may in consequence be taken to render that abolition innocuous.

BIBLIOTHEQUE CHOISIE DE LITERATURE FRANCAISE, No. I; Philadelphia, CAREY, LEA & BLANCHARD.

THE SAME, by *Adam Waldie*, Philadelphia.

Here we have two semi-monthly publications under the same title, devoted to the same object—a dissemination, at a cheap rate, of a knowledge of the French language and current literature. We hope both may succeed, especially if—as in the numbers before us—each takes different subjects. We are bound to say, however, that of these two, that of Carey, Lea & Blanchard is to be preferred for its selections. *Les Ecorcheurs*, by M. D'Arlincourt is a sort of historical satire; which, by recalling and adapting to existing circumstances incidents long past, ridicules present men and times without any offence to medesty. The story of *Notre Dame de Paris*, by Victor Hugo, which Waldie has chosen, seems to us, as far as it goes, and we only know it by that part published in this specimen number, to be somewhat *leste*, as the French say—that is, not quite fit for the instruction of young gentlemen and ladies. Waldie's, however, is beautifully printed, and in that has a superiority over its competitor. With due care in the selections to be made, we cannot doubt the success of such publications.

THE FARMER'S REGISTER, by EDMUND RUFFIN, Richmond, Va.; T. H. White.—This is the first No. of a monthly publication just started in Virginia, and to be devoted mainly to the improvement of the practice, and the support of the interests of agriculture. It is well got up, and it will be a reproach to the intelligence and public spirit of Virginian planters, if it be not well sustained. As intimately connected with the agriculture of that State, this number, under the head of "Agricultural Review," affords a large space to quotations from two papers on the subject of slavery, originally published in the American Quarterly. The first of these papers, by Prof. Dew, looks at slavery as irremediable, and all the efforts for the emancipation and removal of the African race as visionary—the other, by Mr. Harrison, proves indisputably that the existence of slavery in Virginia is a great and growing evil. From such conflict of opinions truth must come at last.

THE BUCCANEER, a Tale, by MRS. S. C. HALL, author of Sketches of Irish Character; 2 vols.; *Philadelphia*, CAREY, LEA & BLANCHARD.—The very spirited sketches of Irish Character, which we have heretofore received from Mrs. Hall, are well emulated in the stirring incidents of the time of the Commonwealth, upon which these volumes are founded. The character of the Protector, and that of Hugh Dalton, the Buccaneer, are drawn with much talent; and the interest of the tale is strong and well sustained throughout.

TALES AND NOVELS OF MARIA EDGEWORTH, uniform edition, vol. V; N. YORK, J. & J. HARPER.—This volume printed with equal excellence with those which preceded it, contains the *Absentee*, *Mde. de Fleury*, *Emilie de Coulanges*, and the *Modern*

TOUR OF THE WANDERING PIPER, written by himself, and printed by *N. J. Little*, Portland, Me., purports to describe the wanderings of this personage through part of Scotland and Ireland. If his skill on the bagpipes do not exceed that with which he handles the pen, his music must be indifferent bad.

LUTHER, AND THE LUTHERAN REFORMATION: by John Scott, A. M. 2 vols. Harpers.—This history of the great Reformer and his times, forms No. III of the Theological Library, now republishing by the Messrs. Harpers. It is avowedly derived from the Church History of Joseph Milner and his cotemporaries; but though much abridged by compressing the mass of documentary evidence, and curtailing and pruning away much subordinate matter, we could have wished, in the prevailing taste for small books, that the Life of Luther had been given in a still more condensed form. The value of the work would have indeed been much lessened for its graver readers; but the chances of its general perusal greatly increased. Still, in its present shape, the publication is highly acceptable, and, though stamped rather strongly with sectarian feelings, for the severe impartiality of history in its most dignified forms, it embodies a mass of curious theological information that will recommend it to lay as well as clerical readers. We have selected for extract the account of the last illness and death of Luther, as one of the most interesting passages in the whole work. *

He left Wittemberg on the 23d of January, accompanied by his three sons. The weather was inclement, and he was detained three days at Halle, by the rising of the river, which he was obliged to cross in a boat, not without some danger. During his stay at Halle he preached for Justus Jonas, who had been superintendent there since the reformation of the place in 1539, and who attended him the remainder of his journey. On his arrival on their borders, the Counts of Mansfeldt received him with an escort of more than a hundred horse—treating him as the Elector of Saxony's ambassador. He was extremely weak, and seemed near death when he reached the residence of Count Albert, on the 28th of January; but medicine, friction, warmth, and other means of resuscitation revived him. He lost no time in entering upon the business which had brought him thither, and labored indefatigably in the despatch of it for three weeks together; being assisted by Wolfgang Prince of Anhalt, Count Swartzburg, and others; but his success was not such as he could have wished, though other points, relating to the ecclesiastical affairs of the country, were brought to some satisfactory conclusion.

In the mean while his health was declining. Some time before, he had a seton or issue opened in his leg, which had been the means of so much relieving his head, that he had been able to walk to church and to the lecture-room, and to mount the pulpit; whereas previously he was obliged to be conveyed in a carriage, and often could only address his family at home. But, on leaving Wittemberg for Eisleben, he had failed to take with him the applications used for keeping up the discharge, and amid the pressure of his present engagements this relief was neglected, which proved of bad consequence.

Thus matters proceeded till the 17th of February, Luther at all times applying himself to business, eating and sleeping well, and being very cheerful in his conversation. On that day, his friends perceiving more repose to be desirable for him, persuaded him to keep quiet in his study, which he did, frequently walking up and down, in an undress, but conversing with animation. "From time to time," says Justus Jonas, "he would stop, and looking out at the window, in that attitude (as his custom was) address fervent prayers to God, so that I and Cœlius, who were in the room with him, could not but perceive it; and then he would say, 'I was born and baptized here at Eisleben, what if I should remain or even die here?'"

Though, however, Luther passed the day in his study, he did not choose to sup there, but in the large dining room, observing, that "to be solitary did not help the spirits." During supper, he quoted and made observations on many interesting passages of Scripture. The conversation also happening to turn on the question, whether the righteous in a future state of blessedness would recognize those who had been their friends on earth, he gave his opinion decididly in the affirmative. In the course of more ordinary conversation, he remarked, "If I can but establish peace among the counts, the rulers of my country, I will then go home, lay myself down in my coffin, and give my body for food to the worms."

Before supper he had complained of a pain in the chest, to which he was subject. It was, however, relieved by warm applications. After supper it returned, but he would not have medical aid called in, but about nine o'clock lay down on a couch and fell asleep. He awoke as the clock struck ten, and desired that those about him would retire to rest.—When led into his chamber he said, "I go to rest with God;" and repeated the words of the Psalm, "Into thy hands I commend my spirit;" and stretching out his hand to bid all good night, he added, "Pray for the cause of God!" He then went to bed, but about one o'clock he awoke Jonas and another who slept in the room with him, desired that a fire might be made in his study, and exclaimed, "Oh! God! how ill I am! I suffer dreadful oppression in my chest; I shall certainly die at Eisleben!" He then removed into his study without requiring assistance, and again repeating, "Into thy hands I commend my spirit!" He walked backwards and forwards, and desired to have warm clothes brought him. In the mean time his physicians were sent for, as also Count Albert, who presently came with his countess. All Luther's friends and his sons were now collected about him, medicines were given him, and he seemed somewhat relieved, and having lain down on a couch he fell into a perspiration. This gave encouragement to some present, but he said, "It is a cold sweat, the forerunner of death; I shall yield up my spirit." He then began to pray, nearly in these words, "O eternal and merciful God, my Heavenly Father, Father of our Lord Jesus Christ, and God of all consolation! I thank thee that thou hast revealed to me thy son Jesus Christ, in whom I have believed, whom I have preached, whom I have confessed, whom I love and worship as my dear Savior and Redeemer, whom the pope and the multitude of the ungodly do persecute, revile and blaspheme. I beseech thee, my Lord Jesus Christ, receive my soul! O Heavenly Father, though I be snatched out of this life, though I must now lay down this body, yet know I assuredly that I shall dwell with thee forever, and that none can pluck me out of thy hands!" He then thrice again repeated the words, "Into thy hands I commend my spirit; thou hast redeemed me, O Lord God of truth!" Also those words, "God so loved the world, that he gave his only begotten Son, that whosoever believeth in him should not perish, but have everlasting life;" and that verse of the lxviiith Psalm, "Our God is the God of whom cometh salvation; God is the Lord by whom we escape death." He then became silent, and his powers began to fail him; but when several present addressed him, "Reverend father, you die in the constant confession of Christ and his doctrine, which you have preached?" he distinctly answered, "Yes," and spoke no more; but about a quarter of an hour afterward, between two and three o'clock of the morning of February 18, "with his hands clasped together, and without a finger or a feature being disturbed, he breathed his last."

Such is the account which Justus Jonas wrote to the Elector of Saxony, by the hand of Count Albert's secretary, within half an hour after Luther's death; except that in a few passages some things are supplied from the fuller narrative which was drawn up for insertion in Luther's German works, and authenticated by the signatures of Justus Jonas, Superintendent of Halle, and formerly rector of the university of Wittemberg, Michael Cœlius, Pastor of Eisleben, and John Aurifaber, chaplain to the Elector of Saxony; all of whom were present with Luther to the last.

HISTORY OF THE FLORENTINE REPUBLIC, AND OF THE AGE AND RULE OF THE MEDICI; by Lorenzo L. Da Ponte, Professor of Italian Literature in the University of the city of New York. 2 vols. 12mo *Collins & Hannay.*—These long expected volumes, whose preparation we mentioned some months since, have at length appeared—their author having found time, though employed simultaneously in several other laborious literary undertakings, to complete a task, to which, from talents, parentage and education, he was peculiarly fitted. In our present notice we can do little more than say, that the expectation of the author's friends will hardly be disappointed in his labors, and add a specimen of them below; taking a subsequent opportunity to give the work that particular examination to which, both from its intrinsic merit and as an original American publication, it is justly entitled. *

THE PLAGUE IN FLORENCE.

In the sufferings of this calamity the Florentines looked not to its ulterior effects, and the desolation of distant countries excited no sympathy among a people groaning and fainting beneath the severity of their own miseries. In Egypt, in Ethiopia, and under the distant mountains of Asia, innumerable masses of a dense population were falling under the baleful influence of a malady, which, undefined in its peculiar characteristics, has addressed itself to the imagination of men with aggravated terrors under name of *the Plague.*

In each place in which its awful visitation was made, it had assumed a modified character; but every modification had been, or had seemed to be, an augmentation of horrors. In many instances, a slight or sudden hæmorrhage was the only and the instaneous forerunner of the stroke of death; and frequently a case of this kind was the first indication to a populous city of the presence of that scourge, which was, in the course of a few hours, to decimate its population, and convert every mansion within its circuit into a house of mourning.

Scarcely had Florence recovered in part from the horrors of famine, while her citizens were still enfeebled and reduced by the scanty and unwholesome food upon which they had been compelled to feed, when the news of the arrival of the Asiatic scourge upon the shores of the Mediterranean awoke them to the dreadful anticipation of a still more devastating visitation. To the anticipation quickly succeeded the miserable reality; the gorgeous cities of the east had been clothed in mourning by its desolating progress, and all the west had received the poison, in the winds that seemed now freighted with contagion in every blast. For a moment the populace, horror-stricken, betook themselves to the ordering of their lives, and to the making preparation for death; to sumptuous living succeeded an abstemiousness which had been scarcely known to the famine itself; but in a moment, as it were, convinced, by the increasing virulence of the pestilence, that all preventives were vain, an unbridled dissoluteness and libertinage broke out as desperate as the desolating plague. The ties of kindred were severed; the mother beheld her infant perish, and never cared to place its lifeless form in sorrow on the bier; and the rude jests and ribaldry of the carriers of the dead were never checked by the presence of grief or by the appearance of mourning for the departed. The sick were left to perish; the fear of contagion had silenced the voice of nature; and the names of father, husband, wife, and child, having lost all moral influence, were now never pronounced, except when some neglected and deserted sufferer breathed them out with imprecations amidst the agonies of death.

It is impossible, in the varying accounts which have come down to us, to say what was really the mortality occasioned by this plague to Florence; but those who have observed the devastations of the recent pestilence, which, from the same birth-place, has extended itself over the earth, may estimate its effect in an age when the passions of men and the character of the times must have rendered them doubly susceptible to any epidemic influence; and when the healing art could hardly have attained the dignity or certainty of a science. We may not believe that 100,000 persons in Florence alone fell victims to the violence of the disease; but, as an illustrious historian has observed, the very exaggeration is proof of the extent of the mortality, and of the profound impression which it had left upon the minds of men. Among the victims, was one from whom we might have expected a full and simply eloquent account of its ravages, and in whom, indeed, we have found the principal authority for the preceding portions of our history. Humanity may feel for the sufferings of mankind even in distant ages, and the loss of human life may excite its sympathy; but literature laments the loss of one of its earliest ornaments more than the crowd of the vulgar, however the great and high-born may appear in the catalogue, and the votaries of intellectual worth select from the general ruin and embalm the name of VILLANI. The chronicle which this author has left of the early affairs of the Florentine people, written with the simplicity adapted to the character of the people and the times, remains to the present day a monument of the genius of its author, and sets forth in its style, even more than its faithful narration of facts, the history of the writer's life and times. It contains an account of the beginning of that pestilence in which Villani lost his life.

CHRONOLOGY, or an Introduction and Index to Universal History, Biography, and Useful Knowledge. New York: *Jonathan Leavitt*, Broadway. Boston: *Crocker & Brewster.* 1 vol. 12mo.—A good work on Chronology, in a portable shape, has always been a great desideratum. The great works, in a quarto form, (though, from the charts they contain, invaluable for reference in a library) are too large, and of course of too costly a character for general use; while the more ordinary books are commonly too small and meagre for useful reference. The elegantly printed duodecimo before us seems exactly to supply what was so much wanted; and its lucid and happy arrangement, with the great variety of historical facts embraced in it, will make the work well received by all who take the pains to examine it for themselves. The introduction of a variety of types, each of its kind being appropriate to particular classes of objects and occurrences, is well calculated to assist one seeking for any distinguished character or peculiar event, while the several divisions of the work are so well adjusted, that the task of reference can be accomplished in a moment. Thus, if we wish to know in what period any individual flourished, what was his nation and profession, and who were his contemporaries, we refer to his name in the biographical table; and then turning to the literary chronology and to the chronogical table, where his actions generally are recorded, we have in a few words the history of the man, and of the times in which he flourished. Of how great an assistance this must be to the student of general history, a better idea can hardly be given than in the language of Dr. Priestley where he speaks of a good system of Chronology as being one of the most efficient contrivances to make an entire course of history easily comprehended, while a proper distinction is at the same time observed between its parts—giving at the same time exact views of the condition of separate countries, with a general knowledge of the world at large—and enabling you to estimate the civilized state of one clime, while you contrast it with the barbarous lands around it. *

Life of Bishop Hobart.—We are gratified in being authorized to state, that Dr. Berrian's Life of this lamented prelate, which will complete the proposed edition of his posthumous works in three volumes, is finished, and will be ready for delivery to subcribers and others, in 2 or 3 weeks —[(Aub.) Gosp. Mess.]

FOREIGN INTELLIGENCE.

LATEST FROM EUROPE.—By the packet ships Philadelphia, Capt. Chapman, from London, and Silas Richards, Capt. Bursley, from Liverpool, we have papers of those places to the 23d and 24th of May.

The affairs of Don Pedro are spoken of favorably, though no important event has occurred.

The most material occurrence in England, was the tremendous meeting at Birmingham, the particulars of which are noticed below.

The North American Colonial Association had a conference with Secretary Stanley on the 20th ult.

The jury in the case of "Cully," the police officer stabbed in the late riot, had brought in a verdict of "*justifiable homicide,*" in the following words:—"We find a verdict of Justifiable Homicide on these grounds: that no riot act was read, nor any proclamation advising the people to disperse; that the government did not take the proper precautions to prevent the meeting from assembling, and that the conduct of the police was ferocious, brutal, and unprovoked by the people, and we moreover express an anxious hope that the government will in future take better precautions to prevent the recurrence of such disgraceful transactions in the metropolis." The meeting near Birmingham, was attended by seventy or eighty thousand persons, who conducted themseves peaceably, and adopted an address to the King and to Parliament. The news from the Continent is not so late by two days as that by the Henri IV. It was expected that Parliament would soon be prorogued. Nothing very important was before that body on the 19th and 20th.

The Royal assent was given to the Cotton duties reduction bill, on the 17th.

Mr. E. J. Littleton, member of the House of Commons for the Southern division of Staffordshire, has been appointed Chief Secretary for Ireland.

On the subject of negro emancipation, Lord Althorp stated in the H. of Commons, that ministers were determined to proceed with the question with all possible despatch.

Corn Laws.—On the 18th, Mr. Whitmore brought forward his promised motion, declaring in effect, that instead of producing any permanent good, the present Corn Laws had tended to cramp trade. The question being taken on going into the consideration of this motion, it was rejected by a majority of 99. Lord Althorp resisted the motion, on the ground that there was not now time to agitate the subject—at the same time he was by no means an advocate of the present corn laws, and thought that the land owners and farmers ought not to adhere to them.

An early prorogation of Parliament was said to pe resolved on by ministers.

The English Money Market was steady all the morning of the 21st—Consols 87 1-2 to 88.

Mr. Kean died at Richmond on the 15th.

London, May 22d.—*Holland and Belgium.*—A preliminary treaty was yesterday signed by the Plenipotentiaries of Great Britain, France and Holland, which, so far as it goes, will give great satisfaction to the commercial world, as well as to a great number of line-and-rule political thinkers, who deem a rupture with Holland to be uncongenial with the spirit of our national history. The treaty consists of six articles, by the first of which the English and French embargoes will be taken off the respective ports of each nation, and the consequent measures in interruption of the navigation by the Dutch nation will be removed. 2. The intercourse between the respective parties will assume the same posture as before the French expedition in November last, and the services of the French and English squadrons be dispensed with. 3. The Dutch garrison of Antwerp prisoners of war will be sent home. 4. The armistice between Holland and Belgium will be continued till the settlement of a permanent separation. 5. The navigation of the Scheldt will in the mean time remain free. 6. The navigation of the Meuse during the same period will be open, subject to the tariff settled by the treaty of Mayence.

[*From the London Traveller of May* 21.]

The great Birmingham Meeting, at Newhall Hill, took place yesterday, according to Mr. Atwood's letter of summons to the field. Upwards of 80,000 persons were present on this occasion, the number of those who attended the grand meeting on the same spot last May. We have not space to give the detailed report this evening, but must content our readers with a brief notice of the event. The immense concourse was addressed at length by Mr. T. Atwood, Mr. O'Connell, Mr. Muntz and Mr. B. Hadley. Various resolutions were put, and carried unanimously, condemnatory of the conduct of His Majesty's Ministers, who had betrayed the confidence of the people, and turned their sanguine hopes into despair. A petition to the King, praying his Majesty to dismiss his present Ministers, was also agreed to without a dissentient voice. Other petitions io the legislature were also adopted, having for object the reduction of taxation and the repeal of the corn laws. The meeting finally dispersed, having the whole of the proceedings with perfect order and regularity, and Birmingham remained quite tranquil.

It is impossible to contemplate the unanimity and determined spirit of this great assemblage without coming to the conviction that unless a change of ministry shortly occur, convulsions of a nature frightful to look forward to, must inevitably take place. The government has given a giant's strength to a mere dwarf, and upon their heads rest the consequences of allowing organized bands to overawe the executive. It is quite clear the demands of the country for relief from a pressure of taxation, are so overwhelming, that no administration can now hold office without resorting to an immediate reduction of the public burdens, in order effectually to enlist the moderate men to oppose the designing acts of the party of the movement.

St. Petersburgh, May 4.—The Turkish General Namick Pacha left this city on the 29th April, to return to Constantinople.

Berlin, May 13.—Accounts received here yesterday by express, which came by way of Vienna, say that all proposals of peace have been rejected by the Egyptians, and that consequently the state of war will continue.

Hamburgh, May 17.—The Russian Government in Poland has published an ordinance of the Emperor, dated the 23d ult., by which persons accused of certain political offences including the publication of false news, are ordered to be tried before courts martial, the sentence of such courts to be carried into execution as soon as they have received the confirmation of the Viceroy.

The Warsaw papers also contain an account of 25 individuals belonging to the late Polish army, who were concerned in a recent unsuccessful attempt at insurrection. Five of the party were taken by Cossacks on the frontier; one of them poisoned himself, but the other four were brought before a court martial and sentenced to death. The sentence was carried into execution on three of the surviving prisoners; with respect to the fourth, on account of his extreme youth, the sentence was mitigated into corporal punishment and hard labor.

Egyptian Newspaper.—A journal is now published at Alexandria, under the title of *Misser Wekaiesi* (Egyptian News). The vignette of this paper, in opposition to the Ottoman Crescent, presents half a sun, shining forth from behind a pyramid, on the side of which stands a flourishing young palm tree. On the left of the vignette are these words:—"Printed at the office of the *Divan of Events* in the Royal Castle." This paper, which is in the Arabic and Turkish languages, gives no political news, but is confined to civil and military subjects, which have merely a local interest.

From Liberia.—We are indebted to Mr. Williams, Lieut. Gov., and Mr. Rogers, high sheriff of Liberia, who arrived in the ship Jupiter from Liberia, for the following interesting account:—The Colony, at the time they left, contained upwards of 3000 inhabitants, and 250 dwelling houses, 5 churches and meeting houses, viz Episcopalians, Presbyterians, Methodists, and Moravians, an Academy, and several schools.—The colony is governed by a governor appointed by the Board of Managers at Washington, a Lieu. Governor, and two Councillors elected by the people once in each year. The people were contented and happy. It is gratifying to state, that there are only two persons in the whole population who are intemperate. Wheat and Rye have not yet been tried sufficiently to test the quality of the growth. Indian corn grows well, but lessens in size both in ear and stalk. Almost all the vegetables of this country flourish well there. They have one schooner of 60 tons, 1 of 40, and 5 of 6 tons, belonging to the place, and will soon build others. The natives in the interior have lately been very quiet. The staples of the country are rice, which is plenty and good; cotton, which is spontaneous, long, and of fine texture—a person from the south has undertaken to bring it to more perfection. Messrs. Williams and Rogers will proceed to Washington immediately, to confer with the Board of Managers on the propriety of allowing the colonists to choose all their officers, and to make such other alterations in their constitution as are considered necessory. The place was very healthy.—[Mer. & Adv.]

SUMMARY.

Greenwich Savings Bank.—This institution was opened for the first time on Monday last, and we are happy to learn was numerously attended by depositors, consisting principally of mechanics residing in the upper wards. The amount received was *Fourteen Thousand and Fourteen Dollars*, a large sum for the first day, and the amount is an auspicious omen for the success of its future operations, managed as it doubtless will be with intelligence and integrity. The funding Committee consist of Samuel Whittemore, John Bolton, and William C. Rhinelander—gentlemen eminently qualified for the trust reposed in them.

Extract from a letter dated New Orleans, June 17.

"Since last addressing you, wehave had an awful time, from the violence by which the very worst description of the cholera raged until within the last few days. It has ceased as suddenly as it commenced, and there is now no more of it. Our city is very dull, and strangers and almost all off, and nothing but cotton appears to sell."

[*From the Globe of Tuesday.*]

M. Roger B. Huygens, Count de Luvendal, late Chargé d'Affaires, *ad interim*, of his Majesty the King of the Netherlands, took leave yesterday of the Secretary of State of the United States, and presented his successer, M. E. A. Martini.

Ninety-one deaths occurred in our city during the week, ending on Saturday. Five persons died of diarrhoea, and twelve children perished with summer complaint.—[Philadelphia Inquirer.]

[*From the Gazette.*]

A beautiful and almost total Eclipse of the Moon was beheld by many hundreds last Monday from the Battery, very many of whom were, like ourselves, taken by surprize, and were therefore doubly gratified.

[*From the State Rights Banner.* (*Jackson, Miss.,*) *June* 13.]

Death of the Governor of Mississippi.—It is with feelings of deep regret, that we announce the death of his Excellency A. M. Scott. He died at the house of Col. Grimball, in this place, last night about 11 o'clock, of cholera. On Sunday evening last he felt slightly indisposed, and took his bed. He continued unwell, but not at all alarmingly so until yesterday about 4 o'clock, P. M., when he was attacked violently with the symptoms of spasmodic cholera. Every thing that medical skill and the attention and kindness of friends could do, was done to save him—but all in vain. He is gone! One of the best of men, the most devoted public servant is gone the way of all flesh. He fell a victim to his sense of public duty—for nothing but the pressure and importance of official business, has kept him in this place since the cholera made its appearance here. His death has been so sudden, and has come with such overwhelming weight upon us, that we must defer for the present any further notice of this melancholy event. We feel much afflicted, that the second number of our journal should appear in mourning columns—but a good and honest man—the chief magistrate of the state—the friend of the stranger—has left us—he died lamented by all who knew him—the object of the respect and regard of every one who admires principle and appreciates character.

Military Election.—At an election, held at Syracuse on the 8th inst. Col. Grove Lawrence, of Camillus, was unanimously elected *Brigadier General* of the 27th Brigade of the N. Y. State Infantry, vice O. Hutchinson, appointed Maj. General.

The name of the Post office at Otisco, Onondago Co., has been changed to that of "Otisco Centre."

Mr. *Edward Livingston* has been recently elected "a Foreign Associate of the Academy of Moral and Political Sciences in Paris," and in the Journal des Debats of 20th ult. we find it stated that the King, by an ordonnance of 8th June, had approved the choice.

Coal Trade.—It appears by the Ulster Republican, that during the week ending on the 22d instant, 6,341 tons 5 cwt. of Lackawana Coal were received at Rondout; and during the same time, 52 vessels were loaded with this article and cleared from that place. Of these, 13 were bound to Providence, 7 to Boston, 2 to Salem, 1 to Jersey City, 1 to Norwich, 1 to Williamsburg, 1 to Staten Island, 2 to Hudson, 1 to Nantucket, 2 to Athens, 2 to Albany, 1 to East Greenwich, 4 to New-York, 1 to Troy, 1 to Bellville, N. J., 1 to Brooklyn, 1 to Poughkeepsie, 1 to Hartford, 1 to Bristol, R. I., 1 to Newburgh, 1 to Haverstraw, 1 to Rahway, 2 to New-Bedford, 1 to Fall River, 1 to New-Haven, 1 to Newport.

It is gratifying to learn, that the Delaware and Hudson Canal has sustained no injury by the late freshet, which has been so destructive at the South.

African Colonization.—We publish with pleasure the annexed circular addressed to the Clergymen of this city. No fitter time than that which commemorates our own freedom, could be selected for aiding in measures to promote that of the slave:

At a recent meeting of the Board of Managers of the New York City Colonization Society, the following resolution was unanimously passed, viz.: "Resolved, That a committee be appointed to address a circular to all the clergymen of the city, earnestly requesting them to have a collection taken up in aid of the Colonization Society in their respective churches, on the 4th of July next, or the Sunday preceding.

The undersigned, appointed a Committee in pursuance of the above resolution, request that you will take measures to have a collection in the Church under your care, for the purpose therein mentioned, and that the proceeds be paid over to the Treasurer of the Society, Moses Allen, Esq. Respectfully yours, &c.

Wm. A. Duer, William Colgate,
G. P. Disosway, John W. Hinton,
Silas Brown.

[*From the Globe.*]

Senior Don Augustin de Yturbide, late Chargé d' Affaires of the United Mexican States, having been appointed Secretary of the Mexican Legation in Great Britain, took leave yesterday, of the Secretary of State of the United States, and presented his successor Senior Don Joaquin Maria del Castillo.

Three Steam Boats Burnt.—The Louisville Advertiser of the 22d ult. contains the fallowing.

Fire.—About ten o'clock last evening, the steamer *Sentinel* took fire while at the wharf in front of this city. The flames spread with such rapidity that, in less than ten minutes, the *Delphine* above, and the *Rambler* below, were also on fire, and the three boats were burned in about an hour to the water's edge.—The Sentinel had a full freight for N. Orleans, the Rambler had on board several hundred barrels of whiskey, and the Delphine had just received about twenty tons freight from New Orleans for Cincinnati. The engines, greatly damaged, will be saved. The cargoes have been entirely lost. Passengers had barely time to make their escape, leaving baggage, clothing and money on board. There were about twelve steam boats lying in port at the time, and it was with difficulty those on fire were separated from the others.

Dinner to Commodore Chauncey.—We understand that the Commissioned Officers of the Navy and Marine Corps on this Station, amounting to about thirty, gave a dinner to Commodore Chauncey on Wednesdoy, at the City Hotel, as a testimony of their respect and regard on the occasion of his leaving the Navy Yard.—[Gazette.]

[*From the Richmond Compiler of* 28*th June.*]

Contents of Mr. Randolph's Will.—We understand from a friend at Charlotte Court house that the will of Mr. Randolph was opened at Roanoke, his late residence on Friday last, by Judge Leigh, in the presence of Judge Tucker and one or two other gentlemen. The following are the principal if not the only devises.

To Henry St. George Tucker, President of the Court of Appeals of Virginia, ten thousand dollars.

To Judge Leigh of Halifax, ten thousand dollars.

To Judge Leigh's son, John Randolph Leigh, a small boy, five thousand dollars.

To John Wickham, Esq. of this place, some plate and a horse or two.

The remainder of his estate—lands, negroes, &c. to the son of his neice, Mrs. Bryant, of Gloucester, daughter of John Coalter, Esq.

Judge Leigh and Judge Tucker are the executors. This will was made subsequent to his return from Russia, and was dated in January 1832.

Our informant says that he has not himself seen the will, but that he gives us the report believed at Charlotte Court house. This will will be offered for probate at the next Charlotte Court. It is the same that was left in Judge Leigh's possession. An examination is yet to be made among Mr. Randolph's private papers.

The name of our correspondent and his official situation at Charlotte Court house, induce us to place the utmost confidence in the correctness of this his statement.

Mr. Randolph, it is said here, has left two other wills; one dated in 1822, by which he directed the manumission of his slaves—and another in March, 1832. The former of these is the one to which he was understood to refer, when he requested at Philadelphia that the provisions of a previous will should be carried into effect.

[*Office of the Pensacola Gazette, June* 18.]

The United States ship Vandalia, George Budd, Esq., Commander, arrived in our harbor on the 13th instant. The Vandalia has returned from a cruise in the Gulf of Mexico, having since her departure visited the Coast of Yucatan, from thence to Vera Cruz, Tampico, Santander, and as far north as the Rio del Norte; but, in consequence of very rough weather, did not anchor at the latter place.

We regret to learn that the Yellow Fever is prevailing to a great degree in the city of Vera Cruz, where it is said by the inhabitants to prove more fatal this season than has been felt the last six years.

We are also informed of the existence of the Epidemic Cholera in the city and surrounding country of Tampico; it is described by the residents as raging with great violence, and, as if any thing were wanting to add to its desolating character, it is accompanied in its destructive course by the Yellow Fever, which spares not even those who may have escaped the malignity of the other disease.

It is authentically said that the mortality was between eighty and ninety deaths a day in that small city. The atmospheric plague had also extended its polluted breath to the shipping in port laying five or six miles below the town. The other parts of the coast at which this ship touched was reported to be healthy, We are gratified to understand that the officers and crew of the Vandalia are in unusual good health, and that, notwithstanding the nature of the late cruise, all have returned unscathed and untouched by the influence of the climate through which they have passed.

Died, on board, at sea, on the 8th of June, Albert Krustner, Esq., in the 29th year of his age.

A late Galenian publishes the substance of a *talk* held at the Four Lakes on the 29th April, between Colonel Henry Dodge, of the United States Dragoons, and the Chiefs of the Winnebago Indians living on Rock river. The council was opened by Whirling Thunder, who disclaimed any hostile intentions towards the whites, and sought only the privilege of remaining on the lands now occupied by them, for this season, that they might be able to raise supplies to keep them from starving during the winter. Several other Chiefs made speeches, the main design of which was to obtain the permission solicited by the first orator. Col. Dodge spoke in reply. Adverting to the treaty of 1832, he said, that it had been ratified by the President and Senate, and that every article would be faithfully performed by the United States; and that the President expected the Winnebagoes would comply faithfully with their stipulations. He said, that the United States Rangers would be there in a few days, to keep peace between the white and red men, and to enforce a strict observance of the treaties made between them.—That there were 20,000 rations of pork and flour at Fort Winnebago, on account of the treaty of Rock Island—a portion of which, knowing their necessitous condition, he would take upon himself to give them, to expedite their removal. Corn would also be furnished at Detroit, to be distributed to the Indians at Fort Winnebago, of which those of Rock river would be entitled to a share. He said, further, that General Clark had stated to Mr. Kinzie, the agent, that he would send the $10,000, stipulated to be given them next September, immediately, but that it appeared the chiefs preferred receiving the money in the fall. The Indians finally consented to go to their new lands at the time appointed by the treaty; entreating, at the same time, that their canoes might be taken across the Wisconsin for them. Colonel Dodge promised compliance with this request, and the council ended.—[St. Louis Rep.]

Ex-Sheriff Parkins.—We observe in several of the morning papers an account of the pending proceedings in the Court of Chancery in relation to this individual. On inquiry, we find that the jury having pronounced by their verdict that Mr. P. is sane, the Court, upon a creditor's bill, and for the security of creditors, have directed Mr. De Peyster, one of the masters resident here, to obtain, as far as he could, a discovery of the property and effects of Mr. P., and to appoint a suitable person as receiver thereof. This appointment has not yet been made, as the master is now engaged in ascertaining the necessary facts. This is the course adopted in similar cases.

MISCELLANY.

Indians of South America.—C. Cushing, Esq. in his interesting *Reminiscences of Spain*, makes these remarks:

The destiny of the Indian races in Spanish America has been widely and remarkably different from what it is in the United States. Here the aboriginal nations have little or no physical weight in the progress of events, and are scattered, in weak tribes, over the face of the land, withering and dwindling daily before the overpowering beams of civilization. There, they constitute a large and important element in the population, aggregated into powerful masses, capable by themselves alone of exerting a decided influence upon affairs, and holding, whether as independent communities, or as the subjects of the Spanish Americans, a rank in the scale of public estimation from which no conceivable change of dynasty or governments can cast them down, and possessing importance which the late revolution has powerfully contributed to strengthen and perpetuate.

Of the independent nations, like the Araucos, the Abiponians, and the various other tribes in the vast interior regions of the continent, who have never bowed the neck under the Spanish yoke, the spirit, vigor and numbers are well known to be far from contemptible. The possession of that noble animal, the horse, especially, by bestowing pastoral habits on the wanderers of the immense savannahs of the South, has communicated an energy and a power of forcible and rapid impression to the movements of the Indians, through the means of which, should they ever become concentrated by any common point of union, they would infinitely surpass, in barbaric splendor, the achievements of the ancient Peruvians and Mexicans. With these Arabs of the West, compare the Creeks, Cherokees, and other tribes in the United States, who, hemmed in by our fixed population, have no resource but either to adopt the manners of civilized neighbors, to be gradually extinguished, or to fly with the feeble remnants of their might beyond the Mississippi: and how striking is the relative consequence of South Americans! These nomadic nations, therefore, who sweep the verdant plains of the South, on steeds tameless and swift as the winds, uniting the errant propensities of the Indian hunter and the Tartar horseman, are peculiar objects of interest to the philosophic observer of events intrinsic to America.

But other portions of the Indian population are fast attaining importance from quite different causes. Among these are the Peruvians, and the observation may serve as an apology for now rescuing from unmerited oblivion some of the obscurer incidents of their political history. They have been a despised and an oppressed race. The hand of power has fallen heavily upon them in every age, from the days of the conquest, when the lawless bands of Pizarro trampled on the nation, down through the tyranny of many a provincial autocrat, to the time when Tupa Catari shook the walls of La Paz with the cry of liberty or death, and the limbs of Tupac Amaru were torn asunder by four wild horses. But a ray of hope smiles upon their future prospect. The revolution has raised them, in common with the other degraded castes, from the dust where they had been grovelling for centuries. In this democracy, rank must follow the lead of talent; and in South America, men of Indian descent, particularly those of mixed blood, begin to learn their consequence from the fortune of war. Mulattoes and *mestizos* are amongst the best and bravest soldiers of the revolution; and some of them have arisen upon its stormy waters to that distinction, which, in times of civil commotion, it is impossible to withhold from superior qualities. It may be long ere the multifarious and many-colored classes which compose the population of the revolutionized countries, will acquire the regular and systematic movement of our own more fortunate land. But whether in peace or in war, in times of discord or of tranquility, a race of men, which rises to two thirds of the whole population, which furnishes the laborers, and mans the fleets and armies of a republican country, cannot easily relapse into insignificance, or into the state of abject servitude. And a permanent melioration of condition is therefore the necessary consequence of the actual position of the Peruvians."

HISTORY OF THE CONSTITUTION.

[*From the Boston Commercial Gazette, June* 11.]

Frigate Constitution; commonly called Old Ironsides.—As every circumstance relative to this favorite ship will now be rendered doubly interesting, we propose to offer a brief history of her splendid and glorious career, part of which is from memory, having been present when she was launched, part from official documents, and part we have gleaned from the old newspapers of the day. She was built at Hart's ship yard, at the north end, situated between the Winnisimmit ferry ways and the Marine Railway, and was launched under the superintendence of Col. Claghorn, the builder, on Saturday, the 21st of October, 1797; consequently she is now nearly 36 years old. In Russell's Boston Commercial Gazette of the next Monday, we find the following notice:—

"The Launch.—*A magnificent spectacle!*—On Saturday last, at 15 minutes past M. the frigate CONSTITUTION was launched into the adjacent element, on which she now rides an elegant and superb specimen of American Naval Architecture, combining the unity of wisdom, strength and beauty. The tide being amply full, she descended into the bosom of the ocean with an ease and dignity, which, while it afforded the most exalted and heartfelt pleasure and satisfaction to the many thousand spectators, was the guarantee of her safety, and the pledge that no occurrence should mar the joyous sensations that every one experienced; and which burst forth in reiterated shouts which "*rent the welkin.*" On a signal being given from on board, her ordnance on shore, announced to the neighboring country, that the CONSTITUTION WAS SECURE. Too much praise cannot be given to Col. Claghorn, for the coolness and regularity displayed in the whole business of the launch; and the universal congratulations he received, were evidences of the public testimony of his skill, intelligence, and circumspection."

The severe labor that attended her birth, which was only effected at a third trial, was seized upon by the enemies of a navy, who at that time were numerous and powerful, as prophetic of ill-luck! with how little reason, her brilliant career has fully demonstrated. We may safely challenge the annals of naval history to name a ship that has done so much to fill the measure of her country's glory. She sailed on her first cruise on Sunday, the 22d of July, 1798, and in the Commercial Gazette of the next morning, we find the following:

"Yesterday sailed on a cruise for the protection of our commerce, the frigate Constitution, commanded by Capt. Samuel Nicholson. This noble frigate reflects honor on all concerned in her construction;—on the agent for obtaining every material of the best kind for her equipment, and for having the same manufactured in a superior manner; —on the builder for the execution of the hull, in a style demonstrating our capability of building ships of war at least equal to any of Europe. The Captain is a brave and experienced commander, in whom may be reposed perfect confidence. Her Lieutenants are young men, who have commanded merchant ships with approbation, and of whom fair expectations may be entertained. Her crew are, with very few exceptions, native sons of Massachusetts, many of them connected by the strongest of human ties, *wives and children*. Upwards of one hundred seamen have given orders in favor of their families, to draw monthly half of their pay, the public having made an arrangement for this purpose, evincive of its paternal care and encouragement of our marine. It would seem that nothing is wanting to render this ship and her crew perfect, but that experience, which can only result from actual exercise at sea."

She returned from this cruize about the middle of November. This was during the brief war with the French republic. We notice the appointment of Isaac Hull as her 4th Lieutenant, who, after the lapse of fourteen years, was fortunate enough to occupy a higher station on her quarter-deck, when the charm of British invincibility was destined forever to be broken. On the 28th of December of the same year, she again sailed from Boston harbor, on her second cruize, from which she returned a few months after, without having had the good luck to fall in with any of the enemy's national ships; less fortunate in this respect than the Constellation, under the gallant Truxton, who, about this time, succeeded in capturing the French frigate L'Insurgente, of 40 guns and 417 men. La Vengeance, a large French national ship of 54 guns and 520 men, likewise struck her colors, but was fortunate enough to escape in a squall, and arrived at Curacoa five days after, a complete wreck.

Shortly after this, our commerce in the Mediterranean having suffered severely from the depredations and insults of the Barbary cruizers, our government at once determined on chastising them. In May, 1803, Com. Edward Preble was appointed to the command of this favorite ship, and in June he sailed with the squadron destined to act against Tripoli. To all conversant with this scene of war, it is well known the Constitution acted a conspicuous part, in fact bore the brunt of the battle. After the destruction of the Philadelphia, of 44 guns, she was for a long time the only frigate on the station, and being ably seconded by the gallant Decatur and the smaller vessels, did more in a single year to humble the pride of the Barbary States, than all Christendom ever did before or since.

In short, such a variety of service, hair breadth escapes, hard knocks, and perilous adventure, has never been achieved by any single vessel. Peace having been concluded with Tripoli, she soon after returned home, where she remained unemployed, or nearly so, till the commencement of the late war with Great Britain. This was on the 18th of June, 1812. On the 12th of July, she left the Chesapeake for New York, preparatory to a long cruize, and on the 17th discovered and was chased by a British squadron, consisting of the Africa 64, Shannon and Guerriere 38, Belvidere 36, and Eolus 32, under the command of Com. Broke, of the Shannon. During the most critical part of the chase, when the nearest frigate, the Belvidere, had already commenced firing, and the Guerriere was training her guns for the same purpose. the possibility of kedging the ship, although in nearly thirty fathoms of water, was suggested by Lieutenant, now Com. Morris, and was eagerly adopted, with the most brilliant success.—The enemy, who had before been gaining, was now almost imperceptibly falling astern, without their being able to conceive of the mysterious manner in which it was effected. A lucky mile or thereabouts had been gained in this way, before the discovery was made, and then it was altogether too late to avail themselves of it, with any probability of success; a propitious breeze springing up at this moment, of which the Constitution felt the first effects, soon increased the distance, and rendered any further exertions in warping and towing unnecessary.

The Shannon had for some hours all her sails completely furled—with 13 boats towing ahead. The Constitution had three boats towing, the remainder being engaged in carrying out kedges, while the crew on board found sufficient employment in warping up to them; and to this most fortunate expedient is her miraculous escape to be attributed. She bid a final adieu to her kind friends on the 19th, after a chase of nearly three days and three nights, and arrived safe in Boston on the 26th of July. This has always been considered, and undoubtedly was, one of the most brilliant exploits that occurred during the war. The deep feeling—the intense anxiety that reigned throughout the ship during this long and arduous chase, and which were pictured in the countenances of all on board in characters too strong to be mistaken—may be imagined, but cannot be described. Let us suppose for a moment, it had been the destiny of this fine ship to have fallen thus early in the war, into the hands of the enemy—a misfortune as has already been shown which was only escaped as it were by a miracle—what a vast difference it would have made at the close of the war, not to speak of the great moral influence of a first victory, in the profit and loss of our naval glory, and although the balance would still have been greatly upon our side, yet the sum total would have been very sensibly or nearly one half diminished. In the first place the loss of so fine a frigate at this early period would have been irreparable, and in following up the consequences—three of the most splendid victories of the war, together with the same number of hair breadth escapes from a superior enemy, would now have to be deducted from the aggregate of our glory, making a difference, both ways, of more than 200 guns and almost 1500 men.

After remaining a few days in port she sailed again, and on the 19th of August—precisely one month after her escape—was lucky enough to fall in with one of the same frigates cruizing alone and with her name emblazoned in large characters in her fore-top-sail. Nothing daunted at this, however, the Constitution took the liberty of edging down, for the purpose of ascertaining the object of such a close pursuit a few weeks before.

As soon as the two ships were within whispering distance, an explanation commenced which, after a close conference of thirty minutes, ended to the complete satisfaction of Captain Hull. She proved to be H. B. M. frigate Guerriere, Capt. Dacres, of 49 guns and 302 men, and had been totally dismasted, and in other respects was rendered such a complete wreck, that getting her into port was altogether out of the question. She was accordingly burned, and the Constitution returned again to Boston, where she arrived on the 30th of August. Never shall we forget the enthusiasm with which she was received.

The news arrived in town during divine service on Sunday morning, and the crowds that flocked to State street to hear the particulars of such a glorious victory, and the shouts that rent the air, fully evinced the deep interest that was felt by every class of the community.

The ship had anchored in President roads about five miles from town, and in the afternoon the harbor was alive with pleasure boats, anxious to take a closer view of Old Ironsides, and to exchange congratulations with her gallant crew. We among hundreds of others sailed round her several times, endeavoring in vain to trace the effects of an engagement with a British frigate of nearly equal force, that had occurred only eleven days before, and in which her antagonist was entirely demolished in the short space of half an hour. We could hardly believe our own eyes—no serious damage whatever was visible; now and then a place or two were pointed out where a splinter had been driven off, but on the whole she appeared in almost as perfect order as when she left the harbor only about three weeks before; indeed it seemed to us that like Shadrach, Meshech and Abednego, she had passed the fiery ordeal entirely unscathed. This was indeed a new state of things, and served not a little to increase the hope and confidence of the friends of our gallant navy throughout the Union.

Captain Hull, being now called upon, if we remember right, to attend to the affairs of a deceased brother—gave up the command of the ship to Capt. William Bainbridge, who, with the same crew, shortly after sailed on another cruize to South America—the sloop of war Hornet, Captain Lawrence, also under his command, from whom however he was soon after separated. On the 29th of December of the same year, while cruizing about 10 leagues from the coast of Brazil, she fell in with, and after a close engagement of nearly two hours, captured H. B. M. ship Java, of 49 guns and upwards of 400 men—Captain Lambert being mortally wounded during the engagement. In addition to her full crew, the Java had upwards of one hundred supernumeraries on board—officers and seamen—to join the British ships of war on the East India station. Besides these there were a number of land officers: among the rest Lieut. Gen. Hislop, Major Walker and Captain Wood.

This was one of the best contested battles that was fought during the war—the Java indeed only struck her flag, when every mast, bow-sprit and all, had, one after another, gone by the board. Com. Bainbridge, in his official account says—"The great distance from our own coast, and the perfect wreck we made of the enemy's frigate, forbade every idea of attempting to take her to the United States. I had therefore no alternative left but burning her, which I did on the 31st of December, after receiving all the prisoners and their baggage, which was very hard work, only having one boat left out of eight, and not one left on board the Java." After blowing her up, the Constitution returned to Boston, where she arrived on the 18th of February, 1813.

Well do we remember being at the Federal street Theatre, when the news of this victory was announced from the stage by the manager, Mr. Powell; and shortly after, when the gallant Commodore, together with some of his officers, appeared in one of the boxes, the whole house resounded for many minutes with the cheering of the audience. The veteran Cooper, then in the prime of life, was in the second act of Macbeth, and although he stood a little behind the scenes, entirely forgetting the gracious Duncan he had murdered, we saw him swing his cap round with as much enthusiasm as any one.

In June 1818, Capt. Charles Stewart was appointed to her command, and on the 30th of December, she proceeded to sea, notwithstanding Boston was then blockaded by seven ships of war, and safely run the gauntlet through the whole of them. She returned on the 4th of April, 1814, and was chased into Marblehead by two of the enemy's heavy frigates, La Nymphe and Junon.

About the middle of December 1814, she proceeded on her second cruize under Capt. Stewart, and on the 28th of February, off Madeira, fell in with and after a severe action of 40 minutes, succeeded in capturing H. B. M. ships Cyane of 34, and Levant 21 guns, and 325 men. A more perfect specimen of nautical skill was probably never witnessed, than was exhibited throughout the whole of this memorable battle. The advantages of a divided force, or as the boys call it, of two upon one, are well known to all, particularly to men of naval science. A raking fire is almost always very sure to be decisive of the fate of a battle; and to have avoided this from either of his opponents, and with a leading breeze too, is indeed miraculous, especially when we recollect that the Constitution succeeded in raking both her antagonists more than once during the engagement.

After taking possession of her prizes, the three ships made sail for the Cape de Verd Islands, and on the 10th of March came to anchor in the harbor of Port Prayo in the Island of St. Jago. Two days after this, a squadron of the enemy hove in sight, consisting of the Newcastle and Leander, of 50 guns each, and the Acasta frigate of 40, the whole under the command of Sir Geo. Collier, and in 7 minutes after the discovery was made, the Constitution with her two prizes had cut their cables, and were under way, being at this time only about gun shot to windward of the enemy. The Levant was recaptured. The Cyane had the good fortune to escape and now forms a part of our Navy. The Constitution continued her cruize, and shortly after returned to Boston, where she was received with every possible demonstration of joy and exultation. The last news from her had been brought by the Cyane, arrived at New York, when the above squadron was left in chase, and she had heard a heavy canonading shortly after losing sight of her, so that the most intense anxiety had for some time been entertained for her safety.

Peace had now been proclaimed, and to have lost this noble vessel and her gallant crew at this late hour, and after such a catalogue of glorious services too, would have cast a gloom over the whole country.

No wonder then that her safe arrival, after so many "moving accidents by flood and field;" and after having escaped so many perils of "the waters, winds and rocks"—should be greeted with such universal enthusiasm. Capt. Stewart not only received the thanks of Congress, but of almost every State Legislature then in session, and from many quarters some more substantial marks of approbation.

After this, old Ironsides was taken to the Navy Yard and immediately dismantled,—where she remained unemployed, we believe, with a single exception, till the spring of 1825, when she was again fitted out, and sailed under the command of Capt. Daniel T. Patterson to join the squadron in the Mediterranean. She remained there about three years, after which she returned to the U. States, and as if to add one more to the many instances of good luck that have always attended her—she was so fortunate as to arrive and fire a federal salute in her native city—during the celebration of the 4th of July, 1828, and contributed not a little, as well by her beautiful appearance as by the delightful associations that are ever uppermost in the presence of such a glorious vessel, to heighten the splendor and add a zest to the festivities of the day.

We have now we believe briefly touched upon most of the leading incidents in the eventful history of this favorite ship; doubtless there are many others well worth recording, but which can be only known to those who at the time of their occurrence were on board of her. We have never been able to find any but unsatisfactory accounts of her operations before Tripoli, and the other Barbary States. A complete and impartial history of the movements of our several squadrons in those seas from 1803 to the present moment, would not only prove extremely interesting, but as a matter of record would be invaluable. We sincerely hope some competent person may be found who is willing to undertake it.

About twelve years since the Constitution was hove out and completely examined at the navy yard in Charlestown, when her timbers, &c., were found to be in remarkable good order, a fact which, after twenty-five years wear and tear and hard service, redounds not a little to the credit of the old fashioned mechanics of Boston.

In her actions with the Guerriere and Java she mounted 54 guns, and 52 when engaged with the Cyane and Levant, her armament being 30 long 24 pounders on the main deck and 24 32 pound carronades on the upper deck. Her loss in the action with the Guerriere was killed and wounded, 14; with the Java, 34, and with the Cyane and Levant, 14 more—total, 62. The Guerriere's loss, killed, wounded, and missing, was 103; the Java's 161; Cyane's, 38; Levant's 39—total, 341, or in the proportion of five and a half to one. The prisoners were nearly one thousand.

The dry dock into which old Iron-Sides is now about to be taken, as well as the one which has recently been completed at Norfolk, is undoubtedly one of the most splendid specimens of stone masonry to be found in the world.

We have heard it spoken of by intelligent travellers, who have visited most of the naval depots in Great Britain, France and Russia, as by far surpassing any thing of the sort they had ever before witnessed. Indeed no expense has been spared by the government to render these magnificent public works as complete and perfect in every respect as possible. They were planned and have been constructed under the superintending care of Col. Loammi Baldwin, a gentleman who, for skill and science, has no superior in the country. The Delaware 74 was probably taken into the dock at Norfolk on Monday last; and should the President arrive here to-day, as is expected he will, the Constitution will probably be hauled in to-morrow afternoon, or at farthest on Monday next. T.

[*From the Pittsburg Gazette.*]

THE CAPTURE OF FORT DU QUESNE.—We received the following account of some incidents which occurred on the day of the taking possession of this place, by General Forbes, from an esteemed friend, to whom it was related by Captain Craighead, who commanded a company of Provincials on that day.

On the evening of the 24th of November, 1758, General Forbes encamped 12 miles from this place. During that day he had received intelligence that the French commandant was preparing to abandon Fort Du Quesne. The defeat of General Braddock, only three years before, was too recent to be forgotten, and of course operated as a salulary hint to General Forbes, not to advance rashly. The intelligence, therefore, even if believed, was not communicated to the troops.

On the morning of the next day, 25th November, 1758, the army advanced from their encampment—the provincial troops in front, followed by a body of highlanders.

Upon their arrival at the rising ground, just beyond where the turnpike gate now stands, they entered upon an Indian race path, upon each side of which a number of stakes, with the bark peeled off, were stuck into the earth, and upon each stake was fixed the head and kilt of a Highlander, who had been killed or taken prisoner at Grant's defeat. The provincials being front, obtained the first view of these horrid spectacles, which it may readily be believed excited no very kindly feelings in their breasts.—They passed along, however, without any manifestation of their violent wrath. But as soon as the Highlanders came in sight of the remains of their countrymen, a slight buzz was heard in their ranks, which rapidly swelled, and grew louder and louder. Exasperated not only by the barbarous outrages upon the persons of their unfortunate fellow soldiers who had fallen only a few days before, but maddened by the insult which was conveyed by the exhibition of the kilts, and which they well understood, as they had long been nicknamed the "petticoat warriors" by the Indians, their wrath knew no bounds.

Directly a rapid and violent trampling was heard, and immediately the whole corps of highlanders, with their muskets abandoned and broadswords drawn, rushed by the provincials, foaming with rage, and resembling, as Captain Craighead coarsely expressed it, "mad boars engaged in battle," swearing vengeance and extermination upon the French troops, who had permitted such outrages. The march was now hastened—the whole army moved forward after the Highlanders, and when they arrived somewhere about where the canal now passes, the Fort was discovered to be in flames, and the last of the boats, with the flying Frenchmen, were seen passing down the Ohio by Smoky Island. Great was the disappointment of the exasperated Highlanders at the escape of the French, and their wrath subsided into a sullen and relentless desire of vengeance.

POETRY.

The following random rhymes, written in pencil on the back of a letter—probably by some steamboat passenger, waiting for the night-boat, were picked up in the baggage-house of the Westpoint landing, and, for the want of a better designation, are communicated to the New-York American, under the title of

WESTPOINT BY MOONLIGHT.

I'm not romantic, but upon my word,
There are some moments when one can't help feeling
As if his heart's chords were so strongly stirred
By things around him, that 'tis vain concealing
A little music in his soul still lingers
Whene'er its keys are touched by Nature's fingers:

And even here, upon this settee lying,
With many a sleepy traveller near me snoozing,
Thoughts warm and wild are through my bosom flying
Like founts when first into the sunshine oozing;—
For who can look on mountain, sky, and river,
Like these, and then be cold and calm as ever?

Bright Dian, who, Camilla-like, dost skim yon
Azure fields—Thou who once earthward bending
Didst loose thy virgin zone to young Endymion
On dewy Latmos to his arms descending—
Thou whom the world of old on every shore,
Emblem of thy sex, *Triformis* did adore—

Tell me—where'er thy silver barque is steering,
By bright Italian or soft Persian lands,
Or o'er those island-studded seas careering,
Whose pearl-charged waves dissolve on coral strands—
Tell me if thou visitest, thou heavenly rover,
A lovelier spot than this the wide world over?

Doth Achelöus or Araxes flowing
Twin-born, from Pindus, but ne'er-meeting brothers—
Doth Tagus o'er his golden pavement glowing,
Or cradle-freighted Ganges, the reproach of mothers,
The storied Rhine, or far-famed Guadalquiver,
Match they in beauty my own glorious river?

What though no turret gray or ivied column
Along these cliffs their sombre ruins rear?
What though no frowning tower or temple solemn,
Of despots tell and superstition here—
What though that mouldering fort's fast-crumbling walls
Did ne'er enclose a baron's bannered halls—

Its sinking arches once gave back as proud
An echo to the war blown clarion's peal
As gallant hearts its battlements did crowd—
As ever beat beneath a vest of steel,
When herald's trump on knighthood's haughtiest day
Called forth chivalric host to battle fray:

For here amid these woods did He keep court,
Before whose mighty soul the common crowd
Of heroes who alone for Fame have fought
Are like the Patriarch's sheaves to Heav'ns chos'n bowed—
He who his country's eagle taught to soar
And set those stars which shine o'er every shore.

And sights and sounds at which the world have wondered
Within these wild ravines have had their birth—
Young Freedom's cannon from these glens have thundered
And sent their startling echoes o'er the earth;
And not a verdant glade or mountain hoary
But treasures up within the glorious story.

And yet not rich in high-souled memories only,
Is every moon-touched headland round me gleaming,
Each cavernous glen and leafy valley lonely,
And silver torrent o'er the bald rock streaming:
But such soft fancies here may breathe around,
As make Vaucluse and Clarens hallow'd ground.

Where, tell me where, pale Watcher of the Night—
Thou that to love so oft hast lent its soul,
Since the lorn Lesbian languished 'neath thy light,
Or fiery Montagu to his Juliet stole—
Where dost thou find a fitter place on earth,
To nurse young love in hearts like theirs to birth?

But now bright Peri of the skies descending,
Thy pearly car hangs o'er yon mountain's crest,
While Night more nearly now each step attending,
As if to hide thy envied place of rest,
Closes at last thy very couch beside,
A matron curtaining a virgin bride.

Farewell! Though tears on every leaf are starting,
While through the shadowy boughs thy glances quiver,
As of the good when Heavenward hence departing,
Shines thy last smile upon the placid river.
So—could I fling o'er glory's tide one ray—
Would I too steal from this dark world away. M.

[*From Mrs. Hale's Magazine.*]

THE SWEDISH GIRL.

"Previous to the departure of Baron de Stael from Sweden, he was enamored of his second cousin, a beautiful girl, whom he had promised to marry; but after the offers received by him from the Neckar family, he wrote to inform her of the peculiar circumstances in which he was placed, and that his union with a lady whom he did not love, would be the means of raising his family from poverty and obscurity. His cousin, without any other answer, returned him his marriage promise stained with her tears, and in seven weeks she was a corpse."

"Even to *pause* on such a thought!
How could it cross his mind!
Vain honors *traffic'd* for and bought,
With happiness resigned!
And love like mine cast meekly by,
At cold ambition's call!—
My heart, be calm!—why should I sigh?
Tears, tears, why will ye fall?
The Swedish girl should scorn to stand
'Tween him and his adopted land.

For him what could I not have borne,
What wo or poverty!
And rich in love, have smiled in scorn,
When heartless wealth rolled by.
I would have urged him up the steep,
Where hangs the noblest crown
Honor may gain, or virtue keep—
An honest man's renown!
Soothed him when yielding to his toils,
And brightened each success with smiles.

Yet why thus linger o'er a dream
That my fond spirit bound,
But lent my soul no cheering beam
To light the darkness round!
Well, be it so;—I may not speak
What stirs within my heart;
The fettered spirit soon will break
Through all things, and depart:
Yet 'twould be sweet again to bless
The object of past tenderness!

Ay, take thy bride, the gifted one,
And glory in her fame!
And when, pervading in the sun,
Her genius lights *thy* name,
Forget, amid its dazzling rays,
How dim thine own appears;
Nor think upon the heartfelt praise
Was thine in former years,
When mingling love, and hope, and pride,
With her now coldly thrown aside.

Ay, wed another—wed the great!
Gain wealth, but with it *care!*
Soon shalt thou feel the galling weight,
And mourn each glittering snare
That wiled thee from thy plighted vow,
From first and unfeigned love;
And bade thee to a *stranger* bow,
A stranger's *bounty* prove!
Madness! that one so loved by me,
Should ever so degraded be!

It may not be! I cannot ask
Earth's happiness for one
Who hath imposed the bitterest task,
That woman's pride has done.
I'll curse not, though I may not bless
The idol of my youth,
But, in my *wreck* of happiness,
I'll prove unfaltering truth.
And, blotted thus with tears, return
The pledge I would, but cannot spurn!"

And such is woman's love! not even pride,
That oft quells passion in its fiercest tide,
This high souled, injured Swedish girl could save,
Fair spring wove garlands o'er her early grave.

MOINA.

TRY ME.

Long, too long, I've waited dearest,
Why, oh why, deny me?
If my constancy thou fearest,
Take me, love, and try me.

See the crystal tear is glowing,
One bright smile will dry it;
Doubt not, when 'tis easy knowing,
Try it, dearest, try it!

Joys when brightest still are fleetest,
Haste, dear maid, they're flying,
Wedded love, the fondest, sweetest,
May be had for trying.

Now I see thy heart relenting,
Dearest I defy thee;
Eyes and cheeks alike consenting,
Maiden, shall I fly thee?

Hopes and vows thus fondly meeting,
Dearest, do not chide them:
They who say Love's joys are cheating,
Never thus have tried them!

MARRIAGES.

On Monday evening last, at Harlem Heights, by the Rev. Dr. Bogart, Col. Aaron Burr, to Mrs. Eliza Jumel.

Tuesday morning, by the Rev. Dr. Knox, Josephus Granger, to A. Jane, daughter of D. L. Haight, Esq. all of this city.

On Tuesday last, by the Rev. Dr. McAuley, P. C. Oakley, of Ogdensburg N. Y., to Miss Sarah A. Dodge, daughter of Danl. Dodge, Esq. of this city.

On Tuesday morning last, by the Rev. Wm. Parkinson, Geo. G. Ryerson, Esq. of New Jersey, to Anna Maria, daughter of Rosewell Graves, M. D. of this city.

On Saturday evening, the 29th June, by the Rev. Dr. Phillips, Henry N. Cruger, Esq. of Charleston, South Carolina, to Harriet, daughter of the late George Douglass, of this city.

On the evening of the 28th, at Christ Church, by the Rev. Dr. Lyell, Mr. Henry W. Clapp, of the firm of Palmer & Clapp, to Miss Anna C. daughter of the late Capt. Robert B. Hilliard.

On Thursday last, in St Thomas' Church, by the Rev. Doctor Hawks, William Peters, to Christiana A. Jackson.

On Tuesday, 25th instant, at Phillipstown, by the Rev. Mr. Sunderland, Mr. T. S. Shepard. of this city, to Miss Elizabeth Jennet, daughter of Judge Garrison, of the former place.

At Bedford, Westchester Co., N. Y., on Wednesday evening, 26th June, by the Rev. Jacob Green, J. W. Tompkins, Esq. of White Plains, to Miss Mary J., daughter of the late Jotham Smith, Esq. of the former place.

At Syracuse, Onondaga county, on Friday evening last, by Rev. J. W. Adams, E. W. Leavenworth, Esq. to Mary E. daughter of Joshua Forman Esq.

☞At Poughkeepsie, on Tuesday morning, by the Rev. Francis M. Kip, George L. Middlebrook. to Eleanor H. K., adopted daughter of Charles Trender.

DEATHS.

On 29th ultimo, after a long illness William Elliott Huger. aged 27 years, son of Judge Huger, of South Carolina.

On Thursday afternoon, Garrat Noel Bleecker, in the 65th year of his age.

On Saturday morning, Mr. John M. Southart, in the 39th year of his age.

On Monday afternoon, after a lingering illness, Susan Frost, in the 43d year of her age, widow of the late Stephen Frost.

On Friday morning. Mr. James Van Beuren, an old and respectable citizen, lumber merchant, in the 69th year of his age.

On Friday afternoon, 21st inst. Mrs. Elizabeth Owens, in the 24th year of her age.

This morning, at 2 o'clock, Mr. John Ruthven. in the 80th year of his age.

Yesterday, Joseph Pell, aged 28 years.

This morning, in the 69th year of her age, Mrs. Ann Rogers.

Last evening, Sarah, the wife of Joseph Jennings.

This morning, June 26th, after a lingering illness, in the 91st year of his age, Rynier Suydam, Esq.

On Friday morning last. at her residence at Yonkers Mrs. Rachel Robert, aged 90 years.

At Moscow, on Friday last, Jellis Clute, Esq. aged about 52.

In Lyons, Mrs. Sarah Hovey, aged 21.

In Canandaigua, on the 16th inst. Mrs. Laura Brewer, wife of Alonzo Brewer, Esq. aged 34.

At Gouverneur, St. Lawrence Co., on the 23d ult. Horatio K. Kneeland, aged 26.

At China, Genessee co. on the 5th inst. the Rev. Wm. Lyman, in his 69th year.

At Raleigh, Mr. Benson Card, aged 100 years, the oldest inhabitant.—Has been married to his wife, still living, 70 years.

At Cantonment Gibson, on 1st May, Massey Logan, of Lawrence county, a Ranger in Capt. Bean's Company.

On Monday, June 10, at the residence of Col. John Williams, in the vicinity of Knoxville, Tenn., the Hon. Nathaniel W. Williams, of Smith county, for many years one of the Judges of the Circuit Court in Tennessee.

At Charleston, S. C., the Rev. Allston Gibbes, Assistant Minister of St. Philip's Church, an efficient and faithful servant of the Church, always active and diligent in attention to her interests.

At Rankin, Miss., on a tour of travel through the U. States, Washington Romaine, Attorney at Law, aged 33 years and 6 months, son of Benjamin Romaine, Esq. of this city.

At Baton Rouge, on the 6th of June, of Cholera, in less than six hours after being attacked by it, Robert Kane Morris, son of Thomas Morris of this city, and grand son of Robert Morris, Financier of the United States during the revolutionary war, and one of the signers of American Independence.

At New Orleans, on the 6th of June, of the Cholera, Mrs. Mary, wife of G. W. Estes, aged 19 years, of Jefferson county, New-York.

Also, the Rev. James F. Hull, late Rector of Christ Church.

On board the steamboat Mount Vernon, June 13, Thomas Yeatman, Esq. of the banking house of Yeatman, Woods & Co. of Nashville. Mr. Yeatman left Nashville with his family with the intention of proceeding to Philadelphia, and a day or two after his departure he was attacked by Cholera, and in a about thirty hours after the attack, expired with perfect resignation and composure, in the 45th year of his age.

Mr. Yeatman was a native of Pennsylvania, and settled in Nashville about the year 1809, where by a course of prudence, industry, and enterprize, he acquired an ample fortune, and enjoyed the enviable reputation of being one of God's noblest works, 'an honest man.' Nashville, by the prevailing epidemic, has lost some of her most estimable and valuable citizens, but amongst them there is none whose loss will be more deeply felt, than the subject of this notice.—[Nashville Republican.]

On the 2d of June, at sea, on board the brig Plymouth, Capt. Daggett, while on her voyage from Leghorn to New York, Wm. E. Rapelje, Esq. of Fishkill, Dutchess county.

On the 19th May last, at Bradford, Eng. in the 70th year of her age, Mrs. Woodhead, relict of the late Mr. Matt'w Woodhead, and mother of J. & T. Woodhead, of this city.

TO DIRECTORS OF RAILWAY COMPANIES AND OTHER WORKS.

☞ An Engineer lately from England, where he has been employed in the location and execution of the principal railways in that country, wishes to engage with some company in the United States.

From his practical knowledge of the various kinds of motive power, both of stationary and locomotive engines, also the construction of railway carriages of many descriptions, he has no doubt that he would prove of efficient service to any company having works now in progress.

Letters addressed to W. E. G. 25 Wall street, or to the care of Wm. & F. Jacques, 90 South street, will be punctually attended to. Most satisfactory reference can be given. m11tf

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN. Manufacturer of Steam Engines, Boilers, Railroad and Mill Work. Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis. Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F31 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maiden-lane.

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte —Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD. U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte— As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself. and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry. Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

☞ **GRACIE, PRIME & CO.,** offer for sale, at 22 Broad street—

2	cases Gum Arabic	Reduced Duty
20	do. Danish Smalts, EFFF	
10	do. Saxon do. do.	
100	bags Saltpetre	
2	do Gall Nuts; 20 tons Old Lead	
100	do. Trieste Rags. FF	
6	boxes each 50 lbs. Tartaric Acid	
6	do. each 25 lbs. do. do.	
1	case 50 bottles Syrop de Vinaigre	
10	cases White Hermitage; 20 do. Cotie Rotie	
10	do. Dry St. Peray: 50 do. Bordeaux Grave	
20	do Chateau Grille; 5 cases each 12 bottles Olives in Oil	
8	bales Fine Velvet Bottle Corks	
100	do. Bourbon Cloves	
30	do. Molieres Almonds	
148	bundles Liquorice Root	
4	bales Goat Skins	
1	cask Red Copper. 1 do. Yellow do.	

DRY GOODS BY THE PACKAGE.

10	cases light and dark ground Prints
40	do. 3-4 and 6-4 colored and black Merinos
15	do. 5-8 colored and black Circassians
2	do. Silk Bandannas, black and colored
4	do. Italian Lustrings
3	do White Satteens
4	do. White Quiltings
10	do. Borrie's Patent Thread, No. 22 and 25
10	do Super high col'd Madras Hdkfs, ent. to debenture
100	pieces Fine English Sheetings, for city trade
3	cases Cantoon Cords
2	do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
25	bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35, 24½x36, 21x34½, 23x36, 26x37, 29x41, 27x38½, 21x39, 24x29, 24x28, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.

5 cases each 1600 Sheets Colored Paper

2	do	do	do	do	do	superfine	
2	do	do	do fig.	do	do		
3	do	do	do plain Gold		do		
2	do	do	do plain Silver		do		
2	do	do	do	Silver	do	with red figures	
2	do	do	do	Gold	do	do	
2	do	do	do	Red	do	Gold do	
2	do	do	do	White	do	Silver do	A20

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1833.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

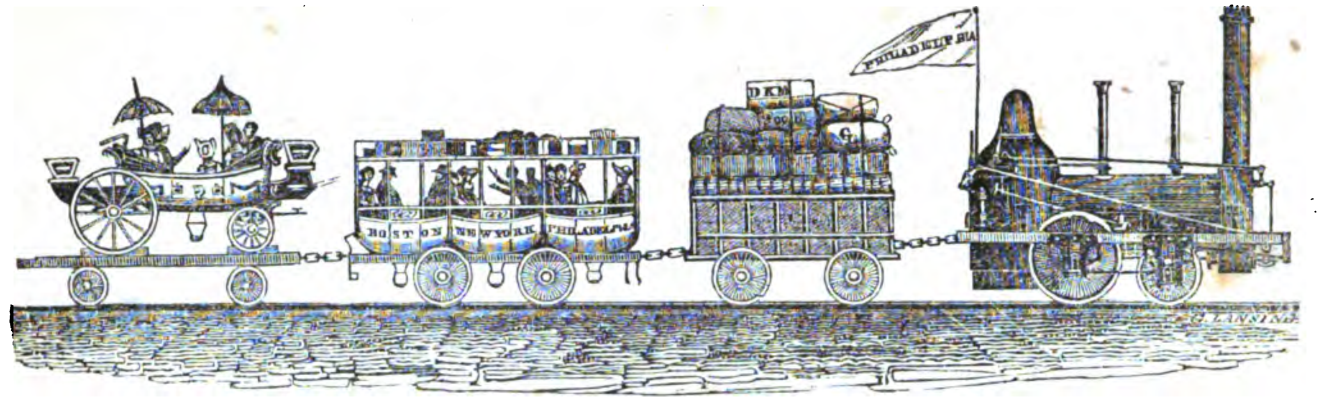
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 ly Germant. and Norrist. Railroad



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, JULY 13, 1833. [VOLUME II.—No. 28.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JULY 13, 1833.

The description of Mr. Brown's mode of moving houses, taken from the forthcoming number of the Mechanics' Magazine, and published in this number of the Journal, will be found interesting, we have no doubt, to most of our readers. Within the last twelve years he has moved about 900 houses, of which number about 400 had brick fronts, and 40 were entirely of brick.

We are gratified to learn that the friends of Railroads in Ohio are progressing with their most important works. The Erie and Mad river Railroad, when completed, will greatly facilitate the transaction of business, as well as enhance the value of property in that section of the state through which it passes.

[From the Sandusky Clarion.]

Lake Erie and Mad River Railroad.—Information has been received in town that the engineers have completed their survey; and we suppose that a report may be expected soon. If the report be favorable, as we think there can be little doubt that it will, we should think that a speedy commencement of this important work would be advisable, and from the information contained in the subjoined extract of a letter to a gentleman in this town, it would seem that the present is a favorable time for re-opening the books of subscription.

Extract of a letter from a gentleman at the eastward to his friend in this town:

"I noticed in the Clarion since you left home. that the engineers are on the proposed route of the Lake Erie and Mad River Railroad. This summer will be as favorable a time to obtain subscriptions to the capital stock as there can be. Money is said to be plenty; confidence in the utility of railroads increasing, and the stock of all of them rising. The stock of the Saratoga Railroad, which was down to about par last fall, is now 20 per cent. above par. The Schenectady Railroad stock, which was last winter as low as six or seven per cent. above par, is now 40 per cent. above par, as you will see by the papers. Mr. E. G., who returned from Charleston, South Carolina, a few days since, says that the Charleston and Hamburgh Railroad stock, which has always been much depressed, rose 20 per cent. in the course of three weeks before he left; 70 miles of which (about half of the whole distance) has been completed a few months, and has cleared twelve per cent. on its cost. If a railroad from Charleston, 70 miles into the interior, will pay twelve per cent., what will a railroad from Sandusky to Dayton, in Ohio, pay on its cost? I should say six times twelve per cent. On the whole, if the books for subscription to the stock of the Mad River Railroad are opened in due time, I cannot but think a sufficient amount will be readily subscribed to effect an object so highly important to the city and State of New-York, as well as to the State of Ohio, and the other States south and west of it."

The following letter, from the Elizabethtown (N. J.) Journal, refers to a subject in which the city of New-York, in common with the country at large, is deeply interested. The other letter referred to we will publish in our next.

Extension of the Elizabethtown and Somerville Railroad.—We have been favored with the following extracts of letters received from gentlemen of the first respectability: the one extensively engaged in and intimately acquainted with the manufacture of iron,—the other residing in Luzerne county, Pennsylvania, possessed of the best means of information, in the correctness of whose opinions great confidence may be placed.

May 20, 1833.

"The information I am able to give in answer to the queries you have suggested, is that there are several routes of contemplated railroads diverging from the great coal formation, in Lackawana Valley. The first is the Lackawana Railroad, extending to the east-north-east. The second is the Legget's Gap Railroad, extending to the north. The latter said to be the best adapted to the continuation of the Susquehanna and Delaware Railroad, it is to run a pretty direct route to the state line. and terminate near the termination of the Chenango Canal, a state work now in progress in New-York. Another, and perhaps the best extension of the Delaware and Susquehanna Railroad, is from Pittston, up the Susquehanna river towards the western lakes. On this route we meet, near the mouth of Tawanda river, large beds of *bituminous* coal, said to be of the first quality, now used considerably, and some transported down the Susquehanna river, and thence in both a south-western and north-eastern direction. They are already known to some extent; much information is still wanting on this subject: the time, however, is fast approaching when it will be had, because the material will be wanted, whether these great highways are made or not, the manufacturing interests of this country demanding this article extensively. We are aware that to Great Britain it is all important as a fuel for manufacturers as well as farmers; indeed, without it England and Wales would, perhaps, long since have become dependencies of other states; she now manufactures of iron and all the other metals more than all the rest of Europe together; having but little water power, her magic power is created and sustained by this very important article, *bituminous coal.* I think we can foresee the time when this substance must be resorted to in New-York, New-Jersey, and Pennsylvania, for manufacturing purposes, and even for fuel. In the vicinity of the coal formations are large masses of iron ore. Indeed, no country is, perhaps, better adapted for the manufacture of iron than northern Pennsylvania.

"When this project of a connected railroad from the Hudson, opposite New-York, to Pittston on the Susquehanna, with its probable extension to the north and west, is once fully known to an enlightened public, I am persuaded it must succeed. No work now projected possesses equal intrinsic value, accommodating so many and such extensive interests, connecting by the nearest practicable route the most important commercial city of the Union with the great western waters. W. H——."

●The following extract of a letter received from a friend residing at Avoylle Ferry, on Red River, La., dated June 10th, gives a faint idea of the alarm which existed there on the appearance of the Cholera in its vicinity:

"Our country is in a perfect panic. The Cholera made its appearance 10 or 15 days ago, on the plantations in the Parish of Rapide, first near Alexandia, and has extended over a large part of it. It has not affected every plantation in its course; some large plantations with, say 200, or upwards, of slaves on it, and not a single case. The disease is said to be violent, and the mortality greater than usual. It is, so far, confined to the slaves, and almost universally to negro men. I have heard of but one white person, (except passengers from steamboats,) that is Mrs. Thomas, wife of Major Isaac Thomas, who died with it suddenly on Friday last. The Parish of Avoylle continues healthy—not a case has occurred in it, except a few from steamboats. Yours, &c. P. G. V."

[*For the American Railroad Journal.*]

Mr. Editor: Sir—Your patience seems likely to become tried by the numerous communications offered for publication in your Journal on the subject of the "Guard Rail"; the contest, however, is not kept up by men *who have examined* that description of rails, in full size for use, and who require to witness *practical results* before they will hazard an *opinion as to merits: all* such persons who have examined it, are not only satisfied as to *practicability* in manufacture, but of its *utility* in the construction of *permanent* railroads. They could not be other than convinced of its practicability in manufacture—*it has become self evident*; castings being already made of various lengths, from *eight feet* downward, with the wrought iron rail *incased*, and of the most PERFECT DESCRIPTION of castings. The contest is kept up, then, by whom? By men whose interests make *manifest* that they feel interested in the success of, or *biassed in favor of, other descriptions of rails*, and to such an extent that any improvement announced which bears a semblance of interfering with *their* favorite, must be assailed by foul means, if there is no prospect of success by fair means. The communication which calls for this reply appeared in your Journal of the 8th June, signed by Uriah A. Boyden. Mr. Boyden, in his apparently inflexible determination to *oppose*, SPECULATIVELY, that which has ALREADY BECOME ESTABLISHED PRACTICALLY, wanders from that prudential course which characterises writings by their delineation of sound argument and judicious conclusions.

I have neither time to devote to, or inclination to notice minutely, that description of writings; neither do I see any use in explaining, or of pointing out errors, to that description of writers; for Mr. Boyden in his last communication remarks, that "he has found none of that inconsistency of his (Mr. Sullivan's) statements with his own, (Mr. Boyden's,) which Mr. Bulkley thinks or endeavors to make it appear there is." I propose, therefore, at this time, *again* to allude to that point of *inconsistency;* and also to show that Mr. Boyden, in his *last* communication, admits of *known perversion* in his *first* communication; and I will also further show, that he has in his last communication embodied *absurdities* most gross.

* * * * * *

In review, therefore, I will first quote the following words, contained in his communication, wherein he stated, that "*Mr. Bulkley, in the first part of his reply to me, said he would show that my statements are inconsistent with each other.* This he has not done. I now call on him to redeem his pledge, by quoting the passages which are at variance." I deny having written any such words: he applies them to himself, and they are *original* with himself. The *inconsistencies which I alluded* to in his *first* communication, I trust, were *clearly shown* to the satisfaction of every *consistent* reader. I would no longer take for granted the *correctness* of words quoted, by such a writer; the words *I did state* are of entirely *different import.* I will repeat the words used in my first communication on the said subject of inconsistency, which are as follows, viz. "U. A. B., if sincere in his statements, is not only actuated by erroneous impressions, but his statements manifest a want of consistency in allusion to the *subject*, and a want of consistency compared with a previous statement on the same side of the subject, made by Mr. S., which was also published in this Journal." As to the *subject* matter to which I alluded, it is *predicated* on a *thing accomplished;* on *practical results*; *his* remarks were *theoretical*, and were inconsistent in allusion to the subject, *practically*; the wrought iron rods, *instead* of being "nearly or quite torn asunder," appearing as perfect in form and strength, after having been *incased* in *cast iron*, as before they were so used. Any *difference* in contraction and expansion, if there be any difference in contraction from high temperature, becomes accommodated the *one* to the *other*, while the rail is in its *heated state*, so that rails containing the wrought iron rod, whether incased with *one eighth* of an inch or *an inch and a half* of cast iron, are as perfect as castings without a wrought rod: is it not then *inconsistent* in its allusion to the *subject*, to attempt to *theorise* away *practical* results?

His statements, also, as I remarked, were *inconsistent* with the *statements of Mr. Sullivan*, when *each* and *both* were striving for the *same point*—hostility to the "Guard Rail": for when alluding to the effect of *incasing wrought iron rods* with *cast* iron, the one, after *premising reasons* for his *conclusions*, says, "hence the wrought iron bar may be nearly or quite *torn asunder* without any extraneous force being applied to the rail"—while the other says, it will be "loose in the bore;" I therefore quote enough of their *own* words to *show* that they are not only inconsistent with *each other*, but that *both* are wrong in their thoughts as to practical results, as will appear by the foregoing paragraph, or on examining rails, *in perfect form for use;* and rails of that description, and rails with the *wrought rod exposed* by the purposely breaking of the cast iron, are now *publicly exposed for examination.*

Mr. Boyden, in his last communication, *denies* having stated in his first communication *any thing like the idea* that *wrought* iron bars would be so closely bound that they could not *slip* in the cast iron. It appears, however, from his conclusions stated, very like the *idea* that the wrought rod could *not slip*, as it would require a *strong hold* to *tear* it "*nearly or quite asunder*, without any extraneous force being applied to the rail."

But, as I before remarked, it does slip, if slipping be necessary to effect the object; and that, too, while both are in a *heated state*, the one becomes so accommodated to the other as to render castings *perfect*. The very great *contraction of cast iron* between its heated and cooled state, would, among *theorisers*, present *difficulties* in preparing *moulds* in such a manner as to bring the *various points* in intricate castings to their proper place for use; yet, what *seemed* a *difficulty* in theory, is not so *practically.*

It is undoubtedly *impracticable* to lay down any *accurate* scale for determining the contraction and expansion of wrought iron or of cast iron *generally*, or of any uniform difference between different descriptions of iron at different temperatures: iron made from some description of ore, being in its nature comparatively porous, other descriptions more consolidated, some comparatively hard, other descriptions soft, brittle or flexible; difference in the nature of metals causes difference in the extent of their contraction and expansion, so that an experiment made on *one* description of iron is no *certain* example for another or other descriptions: it is, however, sufficiently *near* for all practical purposes; as, for instance, Mr. Boyden quoted several experiments from English publications, as follows: viz. experiments at a difference of temperature between 22 and 32 degrees; *cast iron*, one experiment, 0011094 of its length; another experiment on cast iron, 00111 of its length; malleable iron, 001258: thus, there is a difference in the results between the two experiments of cast iron, consequently a greater difference between *one* experiment than the *other*, compared with the malleable iron; and, perhaps, if twenty experiments were made by different persons, without reference to the results of each other, the result of each would differ from the others; it is true the difference may be small, as in the above-mentioned experiments, yet it is sufficient to know that there can be no *certain* rule for any change of temperature, and the more particularly for the *various* changes from, say 32 up to 20,000 and upwards; hence the necessity of relying on *practical* results. Besides, the *difference* he has alluded to, between cast and malleable iron, is scarcely more than imaginary; it does not exceed, in a foot in length, one *eighth part* of an eighth of an inch: so much, therefore, for speculative objections, when in *practice* an *inch rod*, a foot long, while in its *heated state*, as in the manuture of "Guard Rails," would not only *bear being drawn one eighth part of an eighth of an inch*, but it might be drawn down to more than a thousand feet in length, to the size of a small wire, without affecting its texture, instead of "*nearly or quite tearing it asunder*," according to Mr. Boyden's views of tearing iron speculatively.

Mr. Boyden states that in his first communication on this subject, he "*endeavored* to represent the *truth* fairly, without the least *false* coloring." Endeavor, indeed! when in his *last* communication he admits a *known prevarication* in his *first*, as will fully appear in the course of my remarks.

At the commencement, I remarked that I would show that Mr. Boyden had embodied in his *last* communication absurdities most gross. *

* * * *

* * * * Alluding to the *object in question*, Mr. Boyden closes a sentence with these words, viz. "the chief arguments which were at first urged in support of it, are now known to *every* intelligent engineer to be groundless." The expression bears on the face of it an *absurdity*; because, it is not to be presumed that one engineer out of a hundred, or a thousand, has any knowledge whatever of the arguments at first, or last, urged in support of it; besides, engineers and others, men of science, *cautious and prudent*, to avoid hasty and *wrong* conclusions, after *critical* examinations in its practical form for use, *approve of it fully.*

I said his absurd remark, last above quoted, was intended for *effect:* if it have *not* the effect intended, it *has* the effect of indicating the *description* of basis, upon which the mind of its writer is actuated, in aiming at conclusions. Therefore, as to the *thoughts* of such a writer, as to "editions" of rails, &c. they are unworthy a consideration. In reply to his first communication, I stated wherein this rail differed from other descriptions of rails, yet the same point is again blendedly introduced into his last communication: he, most probably, at the same time, knowing or believing, according to the best of his information, that there has been no attempt prior to my own for *incasing* wrought iron within cast iron, so as to *protect* the wrought iron on *all sides* from exposure to *corrosion*, and at the same time to secure or guard the *lower edge* of the *cast* iron against cracking; or, if by any means *cracked* crosswise, to secure its segments, on the same *principle* that the segments of an arch are secured from falling by its abutments. It is true there are other patent rights of the same improvement, but they are predicated on my *own specification*, and on my own account in Europe; and *none* by any other person, in this country or Europe, embracing the *points of improvement* above alluded to, which, with other points, are particularly embraced in my specification.

Mr. Boyden states, that "when malleable iron was first used for rails, it was not known *exactly* how large the rails should be to bear the insistent loads, and that, to ascertain this, rails were made of various sizes: some were so light that they *bent*, which *solved the problem*, so that it is now known what size they should be to support a load of a given weight, knowing the distance between the supports. In some *instances*, he adds, heavier loads have been transported over the roads than the rails were *designed* to bear, which injured them." This is a *difficulty* which *all* railroads will forever be *liable to*; and I have recently been informed, from good authority, that the like difficulty has existed, and does exist in action to an important extent, upon the *rails* of malleable iron, upon a famous modernly constructed railroad in England, notwithstanding the *previous* solving of such *problem.*

I stated in the foregoing, that Mr. Boyden, in his last communication, admitted of known prevarication in his first. There is, perhaps, no *single* object in this country, or in England, in which greater expenditures are proposed—none from which greater benefits are anticipated—than that of *railroads:* hence its *importance* in every point of view. And consequently, the importance of *designating* between the *opinion of a man* who makes up his mind *hastily*, and in *opposition to credibly asserted* actual *observation of results*, and the *opinion of a man* who has become *famous for impartiality*, and respectful reference to *observations* of results by others; and of this last description of persons, no writer upon the subject of railroads, perhaps, ranks higher than *Mr. Wood.* Hence, to attribute *harsh expressions to him*, is not only injustice to *him*, but tends to deceive readers, by leading them to believe they have the *opinion* of an *impartial man*, when in point of *fact* it is only the opinion, *shown by the expression itself to be*, of a passionately partial man. Mr. Boyden himself well knows the character of Mr. Wood, and says, in one part of his communication, "I will again quote *Mr. Wood, as I know of no better authority* on this subject."

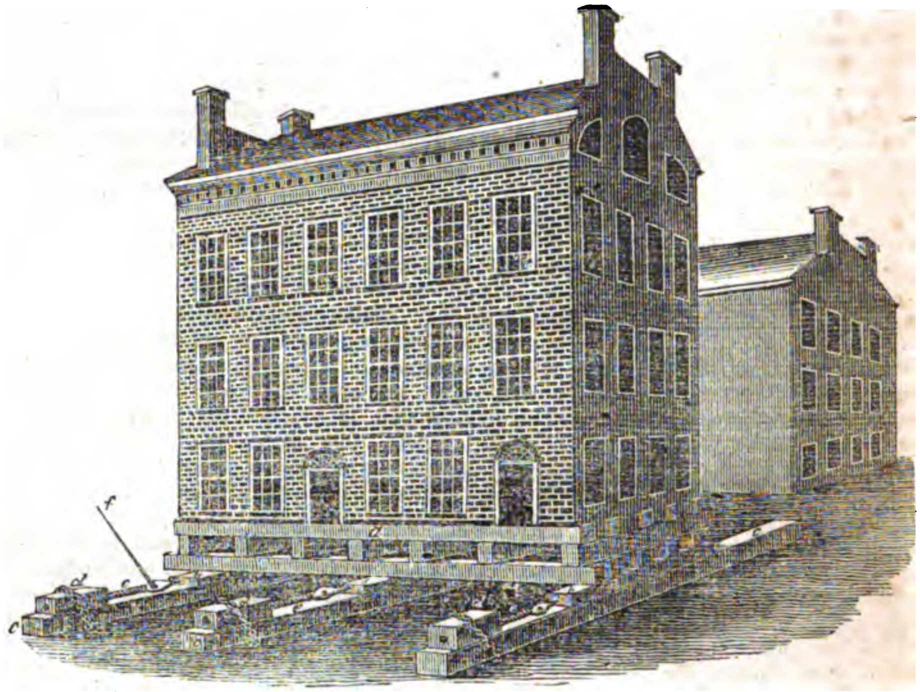
Now I will come to the point I have alluded to. In Mr. Boyden's *first* communication he stated, in order to counteract what I had *quoted* from *English publications*, in reference to the upper surface of malleable iron being liable to destruction, "partly in consequence of the great weight of the wheels, which, being rolled upon the rails, extends the laminæ composing their upper surfaces, and at length causes those surfaces to break up in scales." Mr. Boyden. I say, to *counteract this* (declared to be) *practical result*, stated, in his first communication, as follows: "There has now been sufficient experience in the use of malleable iron rails to put this subject to rest;" and added, "*Mr Wood*, in the second edition of his Treatise on Railroads, page 45, *speaks thus*—'It has been said by *some engineers*, that wrought iron rails exfoliate, or separate, in their laminæ, on that part which is exposed to the pressure of the wheel: this *I pointedly deny, as I have closely examined rails* which have been in use for many years, and on no part are such exfoliations to be seen.'"

Well knowing that Mr. Wood made no such hasty and apparently inconsiderate declaration, I called his, Mr. Boyden's, attention to it, presuming he had made an *error* in *attributing* such expressions to *Mr. Wood.* And in his *last communication*, instead of admitting it to have been an error, he remarked—"*I knew* it was a quotation from Stephenson."

I forbear further reply in detail, except on one point, viz.: Mr. Boyden, in his first communication, concluded a sentence in these words—"It seems cast iron wears off about five times as fast as wrought iron;" and in my reply, I stated that "a man who would pen a sentence of the above description for public inspection, *might* excuse himself by saying he was unacquainted with the nature of metals;" and added, "It is generally well known that *malleable* iron is comparatively so *soft* that a common file will reduce it to fragments; whereas cast iron, if cast on a chill, (and such was declared to be the intention,) is of consistency nearly or quite equal in *hardness* to steel, upon which a file seems to make no impression." And in his last communication he attempts to substantiate his previous statement; but it appears to me to be a point, the common sense relative to which can be determined without any reference to books, or experiments which may or may not have been made with a special view to some specific interested object.

It is generally well known that the wearing away of rails is caused by an object or objects which come in *contact*, chafing and fretting off fragments. Any individual who may provide himself with the two descriptions of iron, and a file, can easily determine which of the two kinds, with equal labor, can be fretted away "five times" as fast as the other. A malleable iron rail may, comparatively speaking, be quickly divided with a common fine-toothed saw; whereas a full-sized *hard cast iron rail*, (and no others have been proposed,) would probably resist the action of fifty or five hundred such saws in succession. It was, no doubt, from this view of the subject, as to comparative *hardness*, that Mr. Wood, in his treatise, first American and second English edition, p. 147, predicated his remarks as follows: "It is considered of paramount importance in the construction of a railroad, to form it of such materials as *combine* strength and durability with economy; *cast iron*, while its *hardness* presents a surface that opposes little obstruction to the wheels of carriages, forms a substance which is also *very durable*, and *resists* the action of the wheels *with great effect*;" and adds, "its brittleness forms the *only* source of *reasonable* objection." This *brittleness*, the only reasonable objection, was the cause of my improvement in *incasing a malleable iron rod* in the *lower edge* of the rail; by which it becomes denominated the "*Guard Rail*," and, as I have before remarked, I have now rails eight feet long, perfect in form, with wrought iron rods through the *lower* edge, from end to end, upon which ten tons on a single bearing has been applied, supports *eight feet* apart, without affecting the rail; and the founder in this city, who made the experiment, gave, as his opinion, that *twenty tons* at a single bearing, would not affect them. *These rails, with various others, are subject to inspection:* a more particular description of which will be found in the American Railroad Journal, Vol. 2, No. 14, which description was made pursuant to various experiments, and predicated on practical results; and nothing has appeared to vary the view of it, as there expressed, in any one particular. I am, respectfully, yours,

R. Bulkley.



Mr. Simeon Brown's Method of moving Brick Buildings. [Communicated by the Inventor for the Mechanics' Magazine.].

References—*a a*, timbers placed in different directions, according to the construction of the building, so that it may be perfectly secure; *b b b*, the slides; *c c c*, the ways, on which the slides move; *d d d*, the pumps, (so named,) secured by chains to the ways, *c c c*, and containing the female screws, which are each provided with a shoulder, pressing against the end of the pump; *e e e*, the propelling screws, which are severally acted upon by a lever, *f*.

Mr. Simeon Brown, Eastern Hall, Manhattan Island, has, by the simple apparatus as shown in the engraving, removed several brick houses, varying from one to three stories high. As we know that many people are quite incredulous on this subject, we subjoin a list of some few tenements that have been moved by Mr. B. in this city.

The first *brick* house Mr. Brown moved was situated at 85 Maiden lane; it is three stories high, and the size is 55 feet by 22. A short time afterwards he lowered Richmond Hill Theatre, a brick building, the wall 8 inches thick, size 50 feet by 42, and moved it a distance of 68 feet. Shortly afterwards seven brick houses, at one time and by one set of apparatus, in Monroe street, each 24 feet by 40; the numbers of the houses are 118, 120, 122, 124, 126, 128, and 130. Then nine brick houses, 25 feet by 40, situated in Avenue D, all raised 5 feet 2 inches, by one operation; and a three story brick house, 58 feet by 25, in Monroe street. The Church now situated in Sixth street, Greenwich Village, he moved a distance of 1,100 feet, with the steeple, clock, pews, and all fixtures; no damage was done, not even so much as breaking a square of glass in either of the windows.

Mr. Brown informs us that, during the last 12 years, he has moved about 900 buildings, 400 of which had brick fronts, and about 40 were entire brick buildings.

The following description of the operation Mr. Brown has handed us for insertion: it is from the fertile pen of Capt. Basil Hall, and is in every particular correct.

"Every one has heard of moving wooden houses; but the transportation of a brick dwelling is an exploit of a different nature. I shall describe simply what I saw, and then tell how the details were managed. In a street which required to be widened, there stood two houses much in the way, their front being twelve feet too far forward. These houses, therefore, must either have been taken down, or shifted back. Mr. Brown undertook to execute the less destructive process. They were both of brick, and built together, one being forty feet deep, and twenty-five feet front; the other thirty-two feet deep, and twenty-two feet front. They were of the same height, that is to say, twenty-two feet from the ground to the eaves, above which stood the roof and two large stacks of brick chimneys; the whole formed a solid block of building, having two rows of six windows each, along a front of forty-seven feet by twenty-two. This was actually moved in a compact body, without injury, twelve feet back from the street. I watched the progress of the preparations on the 25th of May with great interest; but unfortunately, just as the men were proceeding to the actual business of moving the screws, I was obliged to run off to keep an appointment with the Mayor and Corporation; and when I came back, three or four hours afterwards, the workmen had gone away, after moving the building thirty inches—which fact I ascertained by measurements of my own. On the next day, with equal perversity of fate, I was again called off to join a party going to New-Jersey; and on my return two days afterwards, I had the mortification to find the work completed. The houses were now exactly nine feet and a half from the position in which I had left them a few days before.

"It would be tedious, perhaps, were I to give a very minute description of the whole process; but it is so simple, that it may, with a little attention, be understood in a general way even by persons not much accustomed to such subjects, and may possibly be useful to those who are familiar with them.

"The first object is to place a set of strong timbers under the house, parallel to, and level with the street, at the distance of three feet apart, extending from end to end of the buildings, and projecting outwards several feet beyond the gable end walls. The extremities of these timbers are next made to rest upon blocks of wood, placed on the ground quite clear of the walls on the outside. Then by means of wedges driven between the timbers and the blocks, they are made to sustain a great part of the weight of the ends of the house. When this is done, the foundation of the end walls may be removed without danger, as they now rest exclusively on the timbers, the ends of which, as I have described, lie on solid blocks.

"I shall describe presently how the above operation of inserting the timbers is performed; but if for the present we suppose it done, and the house resting on a sort of frame-work, it is easy to conceive that a set of slides, or what are called in dock-yards, ways, on which ships are launched, may be placed transversely under these timbers, that is, at right angles to them, so as to occupy the very place where the foundations of the end walls once stood. It is necessary to interpose between these ways or fixed slides, and the aforesaid timbers, a set of cradles, similar in their purpose to the apparatus of the same name on which ships rest when launched, to which final process of ship-building, by-the-bye, this whole operation bears a close analogy. These cradles are long smooth beams lying along the top of the ways, and in the same line with them; their under surfaces in contact with the ways, and the upper made to bear against the cross timbers which support the house. The object, at this stage of the business, is to bring the whole weight of the house upon these cradles, and, consequently, upon the ways which support them. If this be done, it follows that the ends of the timbers, formerly described as resting on the blocks, will no longer be supported at the same places. This change of the point of support is effected by driving in wedges between the timbers and the cradles; and it will readily be seen that these wedges have the two-fold effect of forcing the cradles down upon the ways, and at the same time of raising up the timbers which support the house, and consequently, in a very small degree, the house itself. The ends of the timbers now rest no longer on the blocks, which are removed, and the house, supported upon the cradles and the ways, is ready for being moved, as soon as the front and back walls have been taken away.

"Suppose all this done, there is nothing required but to apply screws, placed horizontally in the street, and butting against the cradles. On these being made to act simultaneously, the cradles, and consequently the frame which they support, together with the house on its back, move along.

"Such is a general account of the process. I shall now mention how the various difficulties, most of which I dare say will have suggested themselves in the foregoing account, are overcome in practice.

"The horizontal supporting timbers, already described as being placed parallel to the street, and nearly at the same level with it, are introduced one by one in this way. A hole is blocked out in each of the end walls, just above the ground, and large enough to admit a squared beam, say fifteen inches each way, of which the ends project beyond the gable walls about a couple of feet. A firm block of wood is then placed under each of these ends, and wedges being driven underneath, the beam is raised up, and made to bear against the upper parts of the holes. Thus the inserted timber completely supplies the office of the dislodged portions of the masonry. Another pair of holes is then made, and a second timber introduced, and so on till they are all inserted, and firmly wedged up. The distance at which these are placed must depend upon the weight of the wall. In the case I witnessed the houses were of brick, and the timber stood at the distance, I should think, of three feet apart. All this being done, the intermediate masonry, forming the foundation, may be gradually removed, and a clear space will be left under the supported walls for the reception of the ways.

"There are two more precautions to be attended to; these ways must all be coated with tallow, in a layer of at least half an inch thick, so that the wood of the cradles may never come in contact with them. Some device must also be adopted to prevent the whole affair, house and all, from sliding laterally off. This, Mr. Brown prevents, by cutting along the top of one of the ways a deep groove, into which is fitted a correspondent feather, as it is called, of the superincumbent cradle. This being made to work easy, and well greased, the direct motion is not retarded.

"I have said nothing all this time of the front and back walls; but it will easily be understood how these may be made to rest, like those at the ends, on timbers inserted under the house at right angles, to the first set. The whole of the supporting frame-work is tied so firmly together by bolts, that there is not the slightest bending or twisting of any part of the building.

"When at last the house has reached its destination, a new foundation is built, and the whole process being inverted, the timbers are withdrawn one by one; and such is the security of these operations, that no furniture is ever removed from the houses so transported. The inhabitants, I am told, move out and in as if nothing were going on. This, however, I did not see.*

"Mr. Brown was once employed to remove a house from the top to the bottom of a sloping ground; and, as no additional impulse from screws was here required, he resolved to ease the building down, as sailors call it, by means of a tackle. Unfortunately, about the middle of the operation, the strop of one of the blocks broke, and the operator, who was standing on the lower side of the building, was horrified by the apparition of the house under weigh, and smoking, by its friction, right down upon him. With that vigorous presence of mind, which is compounded of thorough knowledge, and a strong sense of the necessity of immediate action, and without which courage is often useless, he dashed a crow-bar, which he happened to have in his hand at the time, into a hole accidentally left in one of the ways, and leaping on one side watched the result. The momentum of the enormous moving body was so great that it fairly drove the iron bar, like a cutting instrument, for a considerable distance through the fibres of the timber. The main point, however, was gained, by the house being arrested in its progress down the hill; and the able engineer, like an officer who has shown himself fertile in resource, reaped more credit from the successful application of a remedy to an evil not anticipated, than if all had gone smoothly from the commencement."

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* We have been credibly informed that, during the operation of moving the house situate at 85 Maiden lane, the Mayor and Corporation, to the amount of 150 individuals, were in the house and partook of refreshments. Also, that, when the church before alluded to was moving, a clergyman delivered a discourse on science, as connected with religion, to a congregation of between 300 and 400 persons.—[Ed. Mec. Mag.]

Wooden Rails for Railroads. By Mercator. To the Editor of the American Railroad Journal.

Sir,—The usefulness of your journal as a medium of intelligence on the subject of railroads becomes more and more apparent, when reflecting on the subject of the numerous millions contemplated to be expended in the construction of railroads in this country. In allusion to the important article of *rails*, persons of *inexperience on the subject*, either as to their own observations, or information derived from observations of others: to such persons the article of *wood*, as well on account of its great strength, as the facilities with which it can be procured in this country, are reasons which seem very naturally to impress their ideas that it should have a preference for that object. A similar idea prevailed in England while projectors of railroads were inexperienced on the subject of railroads; but on perusal of recent English publications, we observe among their sentences such words as these, "since wooden rails have *been abandoned* in this country." Wooden rails *abandoned!!!* would be indeed a surprising idea to inexperienced persons above adverted to; and the *natural conclusion* is, that such abandonment was for *cause*. The probable *principal* cause may be considered as observable in the *necessary situation* in which rails are placed, being nearly on a line with the surface of the earth, exposed to the *moisture* of the earth. In the last number of your Journal a communication appeared from Mr. J. L. Sullivan, on the subject of *preserving* wooden rails in railroads from rapid decay. He states that he has before explained his ideas on this subject, namely, in the year 1829; but does not inform us of any *practical results* during the long interim.

Mr. S. states a well known fact, "That in making railroads with timber, the posts or piles are liable to decay earliest at the surface, or a little above and below the *surface* of the ground, because the effect of heat and moisture there combine"; and adds, "that to guard the post from this effect, I prevent the contact of earth with this part by means of *stone* laid *close around it;* and to keep the *rain* out from among them, I set them in water lime mortar, or in Roman cement, applying it to the wood as well as stones; I also use sometimes, in the upper stratum, especially, a cement made of pitch and lime, when the kind of timber is congenial, pitch being adhesive and lime indestructible. The stone," he adds, "keeps the wood cool, the *cement* keeps it *dry*." This extract seems particularly allusive to *posts* or *piles*; the *decay* of *rails*, however, laid near the surface, is probably co-equal with posts or piles.

Mr. Sullivan not having fortified his explanation with any statement of *practical results*, it is presumable that his specification is predicated upon a theoretical view of the subject. Mr. Sullivan has most undoubtedly taken an erroneous *view* of the subject: as to pitch, if placed in a damp situation below the surface, it is of but short, a few months, duration. This may be observed upon a vessel's bottom, used either in fresh water or salt. Wood cannot be kept dry in a wet or damp situation, by the application of cement of common lime, *water lime*, or *Roman cement*: all three of them are *conductors* of water by *capillary attraction*; so that if a piece of *wood* were covered with any given thickness of such cement, and placed in water, it would be found that the wood would become absorbed in water, conducted to it through the cement, and with such a coating would be more liable to decay than without it, by reason of its retaining dampness when wet, longer than if it had no such close covering. The experiment may be easily made by making a ball of cement; and, after perfectly dry, place it in a dish and apply water in contact with the lower surface of the ball, and it will be found that the cement ball will absorb of water to the extent of about two-fifths of the bulk of the ball, whether of common lime, water lime, or Roman cement; cement is at the same time so far a *check* to the passage of water, as to be useful in the building of canal locks, &c.

As to *comparative* practical results on that subject, the removals of numerous buildings in this city to make room for improvements, gives good opportunity for observation. It is well known, that when a foundation wall is laid, the *sleepers*, so called, for the first floor, are usually placed upon the upper part of the wall, and filled in between the sleepers with stone or bricks, and lime mortar, or cement, in contact with the ends of sleepers or beams, being in *effect* as to *combination*, similar, or nearly so, to the proposition of Mr. Sullivan; and what is the result? The result is that the *ends* of the sleepers on the ground floor are usually found to be quite decayed, so far as surrounded by cement, if in a *damp situation*. It may be said that this is too vague to be relied upon, as some buildings remain many years before removed, and the time at which the hidden ends become decayed consequently matter of uncertainty: it was, however, particularly observed at the ends of the street floor sleepers of the *Arcade*, which was taken down, between Maiden lane and John street, in this city, a short time since. The main part of the sleepers were comparatively nearly as fresh in appearance as new, having been in use only some five or eight years, while the *ends* of the sleepers, surrounded with cement of lime, were of consistency and color of snuff; so that that part of them must have been divested of strength in a comparatively short proportion of the time the building stood; and I think no better reason can be given than that those ends were *retained* in a *damp state*, when wet, *longer* than they would have been if exposed to the atmosphere. But the policy of *using* posts or piles, is questionable; except it be to overcome local difficulties, as in marshy ground. A gentleman who passed over the Charleston Railroad remarked to me that, upon that part *elevated upon piles*, the side, apparently waving, motions were such as to remind him of the motion experienced in a vessel passing over waves.

P. S.—Since writing the above, I accidentally met the person who acted as superintendant in pulling down the *Arcade* above alluded to: who, on inquiry, informed me that it was *seven years* from the time it was built to the time it was pulled down; that the ends of the sleepers placed upon the foundation wall were imbedded, and the ends incased with stone, bricks and mortar, so that the *earth* could not come in contact with the *timber;* but where the *earth* came in contact with the *wall opposite* to the timbers, the *ends* of the beams were completely gone to the consistency of dust.

Knowing it to be your purpose to elicit and disseminate *facts* deemed to be tending to benefit the cause you have espoused, "public improvement," the foregoing is communicated.

MERCATOR.

Simplified application of Steam.—At a meeting of the Paris Academy of Arts and Sciences, held on the 7th January, a memoir was read, in which M. Pelletan treated of the dynamic effects of a jet of steam, and the means of applying it, in a simple and cheap way, to the purposes of the useful arts. 'A jet of steam,' says the author, when thrown into a cylindrical conduit, or into a pipe filled with air, imparts the active power with which it is endued to the column of air, without any other loss than that occasioned by the friction in the conduit, or pipe.'

His detail of the results, which have already ensued from his discovery, are deserving of attentive notice. A jet of steam issuing through an orifice of a milimetre, (.03937 of an inch) under a pressure of five atmospheres, possesses a velocity of five hundred and fifty-nine metres, (1084 3-8 feet,) per second; it consequently moves at the same rate of velocity as a bullet discharged from a gun.

But this enormous velocity is, in its simple form, of no practical benefit, inasmuch as it cannot be converted into a useful agent; when, however, the steam has been enabled to impart motion to a quantity of atmosphere, the velocity, it is true, is diminished, but the mass set in motion is increased; and by this operation, the active power of the jet of steam is susceptible of general application.

The elastic force of steam has hitherto been employed under pressure, by the aid of machines, which are necessarily complicated, and involve a serious loss of power from their bulkiness and friction; but steam, acting immediately by its own power, can be made to effect its objects in machines of so simple a construction, that a steam engine of one man's power may henceforth be worked by a common fire.

Mr. Pelletan remarks, that the force of steam, so applied, may be brought directly in aid of the machine, and will enable him to double and treble his daily gains, instead of its powers being limited, as hitherto, to filling the coffers of great capitalists at a compound ratio.

The same jet of steam, when applied to the purpose of increasing the draft of furnaces, enables the proprietor to reduce their diameter to two inches, even where a large furnace is in question, to lead the smoke in any direction which may suit him best, and to make use of the whole heat produced. By means of this jet, a vacuum may be effected at will, in any given space, however considerable it may be, and permanently maintained, not only at very small cost, but through the medium of an apparatus of the simplest construction. This process is of ready application wherever evaporation or desiccation are to be effected. Acting upon a column of air, the jet supplies the simplest and most efficacious mode which can be adopted for creating blasts in forges, furnaces, &c.

It appears the inventor claims priority in this important discovery, inasmuch as he communicated the properties of the jet in a paper addressed to the Academy in 1829, and he is tenacious of the claim in consequence of the later application of the jet in impelling steam carriages in England.—[Athenæum.]

The Railroad.—The stock of this company has taken another rise, and several sales have been effected within the past two days at ONE HUNDRED AND FIVE DOLLARS per share, at which rate they are now in brisk demand.

The road has been used in a continued line to the inclined plane from Charleston, and from the inclined plane to Hamburg, by a hand car, running on the wooden rail, the iron for which is now conveying, and we shall soon have the satisfaction of announcing a junction—the ironing of 22 miles being all that is now required to complete it.

A passenger arrived from the inclined plane on Saturday, having travelled 120 miles on the road.—[Charleston Patriot, July 2d.]

Equal quantity of Pot Ashes obtained from the same quantity of Ashes. By R. M. W.

[For the New-York Farmer.]

Mr. Fleet,—I very much doubt the possibility of obtaining two tons of Pot-Ash by any new process from the same quantity of raw ashes. I am well aware that our ashes are often thrown out of the leaches, before the strength is entirely exhausted, but, in a well regulated pot-ash, it is usual to water the leaches as long as they will color or taste the lies, after which they are emptied. Now the only question with me is, whether soft water properly applied will dissolve all the alkali, and, if so, I cannot but believe that we shall work the leached ashes in vain. A patent was obtained some years ago for working over leached ashes, but it was soon abandoned, and the expense exceeded the profit. It is true some names are mentioned that ought to give some confidence in this project, but I conceive that the men must have been mistaken. That ashes may be increased in bulk and weight, by adding limestone, sand and salt, is very certain, but it is evidently an adulteration, and no increase of alkali; and it is easily detected when proper tests are applied.

R. M. W.

Babbage on the Economy of Manufactures.

[Continued from page 405.]

[The following is the conclusion of Art. 133, together with the other articles that were omitted, and which the reader will perceive should have been inserted immediately after the words—" The holes for the rivets were punched by hand-punching with presses, and the 1680 holes"]

which each tank required, cost seven shillings. The Navy Board, who required a large number, proposed that he should supply forty tanks a week for many months. The magnitude of the order made it worth while to commence *manufacturer*, and to make tools for the express business. Mr. Maudslay, therefore, offered, if the Board would give him an order for two thousand tanks, to supply them at the rate of eighty per week. The order was given: he made tools, by which the expense of punching the rivet-holes of each tank was reduced from seven shillings to nine-pence; he supplied ninety-eight tanks a week for six months, and the price charged for each was reduced from seventeen pounds to fifteen.

ON THE INFLUENCE OF VERIFICATION ON PRICE.

134. The money price of an article at any given period is usually stated to depend upon the proportion between the supply and the demand. The average price of the same article during a long period is said to depend, ultimately, on the power of producing and selling it with the ordinary profits of capital. But these principles, although true in their general sense, are yet so often modified by the influence of others, that it becomes necessary to examine a little into the disturbing forces.

135. With respect to the first of these propositions, it may be observed that the cost of any article to the purchaser includes, besides supply and demand, another element, which, though often of little importance, is in many cases of great consequence. The cost, to the purchaser, is the price he pays for any article, added to the cost of verifying the fact of its having that degree of goodness for which he contracts. In some cases the goodness of the article is evident on mere inspection; and in these cases there is not much difference of price at different shops. The goodness of loaf-sugar, for instance, can be discerned almost at a glance; and the consequence is, that the price of it is so uniform, and the profit upon it so small, that no grocer is at all anxious to sell it: whilst, on the other hand, tea, of which it is exceedingly difficult to judge, and which can be adulterated by mixture so as to deceive the skill even of a practiced eye, has a great variety of different prices, and is that article which every grocer is most anxious to sell to his customers. The difficulty and expense of verification are, in some instances, so considerable, as to justify the deviation from well established principles. Thus, it has been found so difficult to detect the adulteration of flour, and to measure its good qualities, that, contrary to the maxim that *government* can generally purchase any article at a cheaper rate than that at which they can manufacture it, it has been considered more economical to build extensive flour-mills, (such as those at Deptford,) and to grind their own corn, than to verify each sack purchased, and to employ persons in continually devising methods of detecting the new modes of adulteration which might be resorted to.

136. Some years since, a mode of preparing old clover and trefoil seeds by a process called "*doctoring*" became so prevalent as to excite the attention of the House of Commons. It appeared in evidence before a committee, that the old seed of the white clover was *doctored* by first wetting it slightly, and then drying it with the fumes of burning sulphur; and that the red clover seed had its color improved by shaking it in a sack with a small quantity of indigo; but this being detected after a time, the *doctors* then used a preparation of logwood, fined by a little copperas, and sometimes by verdigris; thus at once improving the appearance of the old seed, and diminishing, if not destroying, its vegetative power already enfeebled by age. Supposing no injury had resulted to good seed so prepared, it was proved that, from the improved appearance, its market price would be enhanced by this process from five to twenty-five shillings a hundred weight. But the greatest evil arose from the circumstance of these processes rendering old and worthless seed, in appearance, equal to the best. One witness tried some *doctored* seed, and found that not above one grain in a hundred grew, and that those which did vegetate died away afterwards; whilst about eighty or ninety per cent. of good seed usually grows. The seed so treated was sold to retail dealers in the country, who, of course, endeavored to purchase at the cheapest rate, and from them it got into the hands of the farmers; neither of these classes being at all capable of distinguishing the fraudulent from the genuine seed. Many cultivators, in consequence, diminished their consumption of the article; and others were obliged to pay a higher price to those who had skill to distinguish the mixed seed, and who had integrity and character to prevent them from dealing in it.

137. In the Irish flax trade, a similar example of the high price paid for verification occurs. It is stated in the report of the committee—"That the natural excellent quality of Irish flax, as contrasted with foreign or British, has been admitted." Yet from the evidence before that committee, it appears that Irish flax sells, in the market, from 1*d*. to 2*d*. per pound less than other flax of equal or inferior quality. Part of this difference of price arises from negligence in its preparation, but a part also from the expense of ascertaining that each parcel is free from stones and rubbish to add to its weight: this appears from the evidence of Mr. J. Corry, who was, during twenty-seven years, Secretary to the Irish Linen Board:

"The owners of the flax, who are almost always people in the lower classes of life, believe that they can best advance their own interests by imposing on the buyers. Flax being sold by weight, various expedients are used to increase it; and every expedient is injurious, particularly the damping of it,—a very common practice, which makes the flax afterwards heat. The inside of every bundle (and the bundles all vary in bulk) is often full of pebbles, or dirt of various kinds, to increase the weight. In this state it is purchased, and exported to Great Britain. The natural quality of Irish flax is admitted to be not inferior to that produced by any foreign country; and yet the flax of every foreign country, imported into Great Britain, obtains a preference among the purchasers, because the foreign flax is brought to the British market in a cleaner and more regular state. The extent and value of the sales of foreign flax in Great Britain can be seen by reference to the public accounts; and I am induced to believe, that Ireland, by an adequate extension of her flax tillage, and having her flax markets brought under good regulations, could, without encroaching in the least degree upon the quantity necessary for her home consumption, supply the whole of the demand of the British market, to the exclusion of the foreigners."

138. The lace trade affords other examples; and, in inquiring into the complaints made to the House of Commons by the frame-work knitters, the committee observe, that "It is singular that the grievance most complained of one hundred and fifty years ago, should, in the present improved state of the trade, be the same grievance which is now most complained of; for it appears, by the evidence given before your committee, that all the witnesses attribute the decay of the trade more to the making of fraudulent and bad articles, than to the war, or to any other cause." And it is shown by the evidence, that a kind of lace called "*single-press*" was manufactured, which was only looped once, and which, although good to the eye, became nearly spoiled in washing by the slipping of the threads; that not one person in a thousand could distinguish the difference between "*single-press*" and "*double-press lace*;" and that, even workmen and manufacturers were obliged to employ a magnifying glass for that purpose; and that, in another similar article, called "*warp lace*," such aid was essential. It was also stated by one witness, that

"The trade had not yet ceased, excepting in those places where the fraud had been discovered; and from those places no orders are now sent for any sort of Nottingham lace, the credit being totally ruined."

139. In the stocking trade similar frauds have been practised. It appeared in evidence, that stockings were made of uniform width from the knee down to the ankle, and being wetted and stretched on frames at the calf, they retained their shape when dry; but that the purchaser could not discover the fraud, until, after the first washing, the stocking appeared to hang like a bag about his ankles.

140. In the watch trade, the practice of deceit, in forging the marks and names of respectable makers, has been carried to a great extent both by natives and foreigners; and the effect upon

[For the matter that should have been inserted here, see page 405, commencing at the 9th line from the end, at the words "our export trade."]

142. There are few articles which the public are less able to judge of than the quality of drugs; and when they are compounded into medicines, it is scarcely possible, even for medical men, to decide whether pure or adulterated drugs have been employed. This circumstance, concurring with an injudicious mode adopted in the payment for medical assistance, has produced a curious effect on the price of medicines. Apothecaries, instead of being paid for their services and skill, have been remunerated by being allowed to place a high charge upon the medicines they administer, which are confessedly of very small pecuniary value. The tendency of such a system is to offer an inducement to prescribe more medicine than is necessary; and, in fact, even with the present charges, the apothecary, in ninety-nine cases out of a hundred, cannot be fairly remunerated unless the patient either takes, or pays for, more physic than is really necessary. The apparent extravagance of the charge of eighteen pence for a two-ounce phial* of medicine is obvious to many who do not reflect on the circumstance that the charge is, in reality, for the payment of professional skill. As the same charge is made by the apothecary, whether he attends the patient or merely prepares the prescription of a physician, the chemist and druggist soon offered to furnish the same commodity at a greatly diminished price. But the eighteen pence charged by the apothecary might have been fairly divided into two parts, three pence for medicine and bottle, and fifteen pence for attendance. Now the chemist, although he has reduced the price of the apothecary's draught, from thirty-three to forty-four per cent., yet realizes a profit of between two and three hundred per cent. on the ten pence or shilling he charges for the same compound. This enormous profit has called into existence a multitude of competitors; and in this instance the impossibility of verifying has, in a great measure, counteracted the beneficial effects of competition. The general adulteration of drugs, even at the extremely high price at which they are retailed as medicine, enables those who are imagined to sell them in an unadulterated state to make large profits, whilst the same evil frequently disappoints the expectation and defeats the skill of the most eminent physician.

It is difficult to point out a remedy for this evil without suggesting an almost total change in the system of medical practice. If the apothecary were to charge for his visits, and to reduce his medicines to one-fourth or one-fifth of their present price, he would still have an interest in procuring the best drugs, for the sake of his own reputation or skill. Or if the medical attendant, who is paid more highly for his time, were to have several pupils, he might himself supply the medicines without a specific charge, and his pupils would derive improvement from compounding them, as well as from examining the purity of the drugs he would purchase. The public would derive several advantages from this arrangement. In the first place, it would be greatly for the interest of the medical practitioner to have the best drugs; it would also be his interest not to give more physic than needful; and it would also enable him, through some of his more advanced pupils, to watch more frequently the changes of any malady.

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* Apothecaries frequently purchase these phials at the old bottle-warehouses at ten shillings per gross, so that when their servant has washed them the cost of the phial is nearly one penny.

143. The principle that *price*, at any moment, is dependent on the relation of the supply to the demand, is true to the full extent only when the whole supply is in the hands of a very large number of small holders, and the demand is caused by the wants of another set of persons, each of whom requires only the same very small quantity. And the reason appears to be, that it is only in such circumstances that a uniform average can be struck between the feelings, the passions, the prejudices, the opinions, and the knowledge, of both parties. If the supply, or present stock in hand, be entirely in the possession of one person, he will naturally endeavor to put such a price upon it as shall produce by its sale the greatest quantity of money; but he will be guided in this estimate of the price at which he will sell both by the knowledge that increased price will cause a diminished consumption, and by the desire to realize his profit before a new supply shall reach the market from some other quarter. If, however, the same stock is in the hands of several dealers, there will be an immediate competition between them, arising partly from their different views of the duration of the present state of supply, and partly from their own peculiar circumstances with respect to the employment of their capital.

144. Again, if the commodity itself is of a perishable nature, such, for example, as a cargo of ice imported into the port of London from Norway a few summers since, then time will supply the place of competition; and, whether the article is in the possession of one or of many persons, it will scarcely reach a monopoly price. The history of *cajeput oil*, during the last few months, offers a curious illustration of the effect of opinion upon price. In July of last year (1831) cajeput oil was sold, exclusive of duty, at 7*d.* per ounce. The disease which had ravaged the east was then supposed to be approaching our shores, and its proximity created alarm. At this period, the oil in question began to be much talked of as a powerful remedy in that dreadful disorder; and in September it rose to the price of 3*s.* and 4*s.* the ounce. In October there were few or no sales: but in the early part of November, the speculations in this substance reached their height, and between the 1st and the 15th it realized the following prices: 3*s.* 9*d.*, 5*s.*, 6*s.* 6*d.*, 7*s.* 6*d.*, 8*s.* 9*d.*, 10*s.*, 10*s.* 6*d.*, 11*s.* After the 15th of November, the holders of cajeput oil were anxious to sell at much lower rates; and in December a fresh arrival was offered by public sale at 5*s.*, and withdrawn, being sold afterwards, as it was understood, by private contract, at 4*s.* or 4*s.* 6*d.* per ounce. Since that time, 1*s.* 6*d.* and 1*s.* have been realized: and a fresh arrival, which is daily expected, (March, 1832,) will probably reduce it below the price of July. Now, it is important to notice that, in November, the time of greatest speculation, the quantity in the market was held by *few* persons, and that it frequently changed hands, each holder being desirous to realize his profit. The quantity imported since that time has also been considerable.*

145. The frequent speculations in oil, tallow, and other commodities, which must occur to the memory of most of my readers, were always founded on the principle of purchasing up all the stock on hand, and agreeing for the purchase of the expected arrivals; thus proving the opinion of capitalists to be, that a larger average price may be procured by the stock being held by few persons.

ON THE INFLUENCE OF DURABILITY ON PRICE.

146. Having now considered the circumstances that modify what may be called the momentary amount of price, we must next examine a principle which seems to have an effect on its permanent average. The durability of any commodity influences its cost in a permanent manner. We have already stated, that what may be called the *momentary price* of any commodity depends upon the proportion existing between the supply and demand, and also upon the cost of verification. The *average price*, during a long period, will depend upon the labor required for producing and bringing it to market, as well as upon the average supply and demand; but it will also be influenced by the *durability of the article manufactured.*

Many *things* in common use are substantially consumed in using: a phosphorus match, articles of food, and a cigar, are examples of this description. Some things after use become inapplicable to their former purposes, as paper which has been printed upon; but it is yet available for the cheesemonger or the trunk-maker. Some articles, as pens, are quickly worn out by use; and some are still valuable after a long-continued wear. There are others, few, perhaps, in number, which never wear out; the harder precious stones, when well cut and polished, are of this latter class; the fashion of the gold or silver mounting in which they are set may vary with the taste of the age, and such ornaments are constantly exposed for sale as second-hand, but the gems themselves, when removed from their supports, are never so considered. A brilliant, which has successively graced the necks of a hundred beauties, or glittered for a century upon patrician brows, is weighed by the diamond merchant in the same scale with another which has just escaped from the wheel of the lapidary, and will be purchased or sold by him at the same price per carat. The great mass of commodities is intermediate in its character between these two extremes, and the periods of respective duration are very various. It is evident that the average price of those things which are consumed in the act of using them, can never be less than that of the labor of bringing them to market. They may, for a short time, be sold for less; but under such circumstances their production must soon cease altogether. On the other hand, if an article never wears out, the consequence will be, that its price may continue *permanently below* the cost of the labor expended in producing it; and the only consequence will be, that no farther production will take place: its price will continue to be regulated by the relation of the supply to the demand; and should that at any after time rise, for a considerable period, above the cost of production, it will be again produced.

147. Articles become old from actual decay, or the wearing out of their parts; from improved modes of constructing them; or from changes in their form and fashion, required by the varying taste of the age. In the two latter cases, their utility is but little diminished; and, being less sought after by the classes who have hitherto employed them, they are sold at a reduced price to a class of society rather below that of their former possessors. Many articles of furniture, such as well-made tables and chairs, are thus found in the rooms of those who would have been quite unable to have purchased them when new; and we find constantly, even in the houses of the more opulent, large looking-glasses which have passed successively through the hands of several possessors, changing only the fashion of their frames; and in some instances even this alteration is omitted, an additional coat of gilding saving them from the character of being second-hand. Thus a taste for luxuries is propagated downwards in society; and, after a short period, the numbers who have acquired new wants become sufficient to excite the ingenuity of the manufacturer to reduce the cost of supplying them, whilst he is himself benefitted by the extended scale of demand.

There is a peculiarity in looking glasses with reference to the principle just mentioned. The most frequent occasion of injury to them arises from accidental violence; and the peculiarity is, that, unlike most other articles, when broken they are still of some value. If a large mirror is accidentally cracked, it is immediately cut into two or more smaller ones, each of which may be perfect. If the degree of violence is so great as to break it into many fragments, these smaller pieces may be cut into squares for dressing-glasses; and if the silvering is injured, it can either be re-silvered or used as plate-glass for glazing windows. The addition from our manufactories to the stock of plate-glass in the country is annually about two hundred and fifty thousand square feet. It would be very difficult to estimate the quantity annually destroyed or exported, but it is probably small; and the effect of these continual additions is seen in the diminished price and increased consumption of the article. Almost all the better order of shop fronts are now glazed with it. If it were quite indestructible, the price would continually diminish; and unless an increased demand arose from new uses, or from a greater number of customers, a single manufactory, unchecked by competition, would ultimately be compelled to shut up, driven out of the market by the permanence of its own productions.

OF PRICE AS MEASURED BY MONEY.

148. The *money price* at which an article sells furnishes us with comparatively little information, if we compare distant intervals of time and different countries; for gold and silver, in which price is usually measured, are themselves subject to variations, like all other commodities; nor is there any invariable standard by which such comparisons can be made. The average price of a certain quality of various manufactured or raw produce has been suggested as a permanent standard of price; but a new difficulty then presents itself: for the improved methods of producing such articles render their *money price* extremely variable within very limited periods. The annexed table will afford a striking instance of this kind of variation within a period of only twelve years.

Prices of the following articles at Birmingham in the undermentioned years.

DESCRIPTION.		1818.		1824.		1828.		1830.	
		s.	*d.*	*s.*	*d.*	*s.*	*d.*	*s.*	*d*
Anvils - - - - - - - -	per cwt.	25	0	20	0	16	0	13	0
Awls, polished, Liverpool, - -	gross	2	6	2	0	1	6	1	2
Bed Screws, 6 inches long, - -	gross	18	0	15	0	6	0	5	0
Bits, tinned, for Bridles, - -	dozen	5	0	5	0	3	3	2	6
Bolts, for doors, 6 inches, - -	dozen	6	0	5	0	2	3	1	6
Braces, for Carpenters, with 12 bits,	- set	9	0	4	0	4	2	3	5
Buttons, for Coats, - - - -	gross	4	6	6	3	3	0	2	2
Buttons, small, for Waistcoats, &c.	gross	2	6	2	0	1	2	0	8
Candlesticks, brass, 6 inches, -	pair	2	11	2	0	1	7	1	2
Curry Combs, six barred, - -	dozen	2	9	2	6	1	5	0	11
Frying Pans, - - - - -	cwt.	25	0	21	0	18	0	16	0
Gun Locks, single roller, - -	each	6	0	5	2	1	10	1	6
Hammers, Shoe, No. 0, - - -	dozen	6	9	3	9	3	0	2	9
Hinges, cast butts, 1 inch, - -	dozen	0	10	0	7½	0	3¾	0	2¾
Knobs, brass, 2 inches, for Commodes,	dozen	4	0	3	6	1	6	1	2
Latches, for doors, bright thumb, -	dozen	2	3	2	2	1	0	0	9
Locks, for doors, iron rim, 6 inches,	dozen	38	0	32	0	15	0	13	6
Sad Irons, and other Castings, -	cwt.	22	6	20	0	14	0	11	6
Shovel and Tongs, fire irons, -	pair	1	0	1	0	0	9	0	6
Stirrups, plated, - - - -	pair	4	6	3	9	1	6	1	1
Table Spoons, tinned, - - -	gross	17	0	15	0	10	0	7	0
Trace Chains, - - - -	cwt.	28	0	25	0	19	6	16	6
Trays, Japanned Tea, 30 inches, -	each	4	6	3	0	2	0	1	5
Vices, for Blacksmiths, &c. - -	cwt.	30	0	28	0	22	0	19	6
Wire, Iron, No. 6, - - - - -	bundle	16	0	13	0	9	0	7	0
——, Brass, - - - - - -	- lb.	1	10	1	4	1	0	0	9

I have taken some pains to assure myself of the accuracy of the above table: at different periods of the years quoted the prices may have varied; but I believe it may be considered as a fair approximation. In the course of my inquiries I have been favored with another list, in which many of the same articles occur; but in this last instance the prices quoted are separated by an interval of twenty years. It is extracted from the books of a highly respectable house at Birmingham; and the prices confirm the accuracy of the former table, so far as they relate to the articles which are found in that list.

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* I have understood that the price of camphor, at the same time, suffered similar changes.

Prices of 1812 *and* 1832.

DESCRIPTION.		1812. s.	1812. d.	1832. s.	1832. d.	Reduction per cent. since 1812.
Anvils - - - - -	per cwt.	25	0	14	0	44
Awls, Liverpool blades, - -	gross	3	6	1	0	71
Candlesticks, iron, plain, - -	-	3	10½	2	3½	41
———, screwed, - -	-	6	4½	3	9	41
Bed screws, 6 inch square head,	gross	7	6	4	6	40
———, flat head, - -	gross	8	6	4	8	45
Curry Combs, 6 barred, - -	dozen	4	0½	1	0	75
———, 8 barred, - -	dozen	5	5½	1	5	74
———, patent, 6 barred, -	dozen	7	1½	1	5	80
———, 8 barred, - -	dozen	8	6½	1	10	79
Fire irons, iron head, No. 1, -	dozen	1	4½	0	7½	53
———, No. 2, -	dozen	1	6	0	8½	53
———, No. 3, -	dozen	1	8½	0	9½	53
———, No. 4, -	dozen	1	10½	0	10½	53
Gun-Locks, single roller, - -	each	7	2½	1	11	73
Locks, 1½ brass, port. pad, - -	each	16	0	2	6	85
———, 2½ inch 3 keyed till-locks,	each	2	2	0	9	65
Shoe Tacks, - - - - -	gross	5	0	2	0	60
Spoons, tinned, iron, table, - -	gross	22	6	7	0	69
Stirrups, com. tinned, 2 bar, -	dozen	7	0	2	9	61
Trace Chains, iron, - - -	cwt.	46	9½	15	0	68

I cannot omit availing myself of this opportunity of calling the attention of the manufacturers, merchants, and factors, in *all* our manufacturing and commercial towns, to the great importance, both for their own interests, and for that of the population to which their capital gives employment, of collecting with care such averages from the actual sales registered in their books. Nor, perhaps, would it be without its use to suggest, that such averages would be still more valuable if collected from as many different quarters as possible; and when the amount of the goods from which they are deduced, together with the greatest deviations from the mean, are given; and that if a small committee were to undertake the task, it would give great additional weight to the information. Political economists have been reproached with too small a use of facts, and too large an employment of theory. If facts are wanting, let it be remembered that the closet-philosopher is unfortunately too little acquainted with the admirable arrangements of the factory; and that no class of persons can supply so readily, and with so little sacrifice of time, the data on which all the reasonings of political economists are founded, as the merchant and manufacturer; and, unquestionably, to no class are the deductions to which they give rise so important. Nor let it be feared that erroneous deductions may be made from such recorded facts: the errors which arise from the absence of facts are far more numerous and more durable than those which result from unsound reasoning respecting true data.

149. The great diminution in price of the articles here enumerated may have arisen from several causes: 1. *The alteration in the value of the currency.* 2. *The increased value of gold in consequence of the increased demand for coin.* The first of these causes may have had some influence; and the second may have had a very small effect upon the two first quotations of prices, but none at all upon the two latter ones. 3. *The diminished rate of profit produced by capital, however employed.* This may be estimated by the average price of three per cents. at the periods stated. 4. *The diminished price of the raw materials out of which these articles were manufactured.* The raw material was principally brass and iron, and the reduction upon it may, in some measure, be estimated by the diminished price of iron and brass wire, in the cost of which articles, the labor bears a less proportion than it does in many of the others. 5. *The smaller quantity of raw material employed, and perhaps, in some instances, an inferior quality of workmanship.* 6. *The improved means by which the same effect was produced by diminished labor.*

In order to afford the means of estimating the influence of these several causes, the following table is subjoined:

Average Price.	1812. £.	s.	d.	1818. £.	s.	d.	1824. £.	s.	d.
Gold, per ounce - - -	4	15	6	4	0	0	3	17	6½
Value of currency per ct.	79	5	3	97	6	10		100	
Price of 3 per ct. consols		59½			78½			93½	
Wheat, per qr. - - -	6	5	0	4	1	0	3	2	1
English pig iron, at Birmingham - - - - -	7	10	0	6	7	6	6	10	0
English bar iron, do. -		. .		10	10	0	9	10	0
Swedish bar iron, in London, excluding duty of from 4*l.* to 6*l.* 10*s.* per ton - - - - -	16	10	0	17	10	0	14	0	0

Average Price.	1828. £.	s.	d.	1830. £.	s.	d.	1832. £.	s.	d.
Gold, per ounce - - -	3	17	7	3	17	9½	3	17	10½
Value of currency per ct.		100			100			100	
Price of 3 per ct. consols		86			89½			82½	
Wheat, per qr. - - -	3	11	10	3	14	6	2	19	3
English pig iron, at Birmingham - - - - -	5	10	0	4	10	0	.	.	.
English bar iron, do. -	7	15	0	6	0	0	5	0	0
Swedish bar iron, in London, excluding duty of from 4*l.* to 6*l.* 10*s.* per ton - - - - -	14	10	0	13	15	0	13	2	0

The most influential of these causes has, undoubtedly, been the invention of cheaper modes of manufacturing. The extent to which this can be carried, and yet a profit be realized at the reduced price, is truly astonishing, as the following fact, which rests on good authority, will prove. Twenty years since, a brass knob for the locks of doors was *made* at Birmingham; the price at that time, being 13*s.* 4*d.* per dozen. The same article is now *manufactured*, having the same weight of metal, and an equal, or in fact a slightly superior finish, at 1*s.* 9½*d.* per dozen. One circumstance which has produced this economy in the *manufacture* is, that the lathe on which these knobs are finished is now turned by a steam-engine; so that the workman, relieved from that labor, can make them twenty times as fast as he did formerly.

150. The difference of price of the same article, when of various dimensions—at different periods, in the same country—and in different countries—is curiously contrasted in the annexed table.

Comparative Price of Plate Glass, at the Manufactories of London, Paris, and Berlin.

Height.	Breadth.	LONDON. 1771. £.	s.	d.	1794. £.	s.	d.	1832. £.	s.	d.
Inches.	*Inches.*									
16	16	0	10	3	0	10	1	0	17	6
30	20	1	14	6	2	3	2	2	6	10
50	30	24	2	4	11	5	0	6	12	10
60	40	67	14	10	27	0	0	13	9	6
76	40	.	.	.	43	6	0	19	2	9
90	50	.	.	.	84	8	0	34	12	9
100	75	.	.	.	275	0	0	74	5	10
120	75	.	.	.	.	.	.	97	15	9

Height.	Breadth.	PARIS. 1825. £.	s.	d.	BERLIN. 1828. £.	s.	d.
Inches.	*Inches.*						
16	16	0	8	7	0	8	11
30	20	1	16	10	1	10	6
50	30	9	4	5	8	13	0
60	40	22	7	5	21	18	6
76	40	36	4	5	35	2	11
90	50	71	3	8	.	.	.
100	75	210	13	3	.	.	.
120	75	354	3	2	.	.	.

The price of silvering these plates is twenty per cent. on the cost price for English glass; ten per cent. on the cost price for Paris plates; and twelve and a half on those of Berlin.

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the months of February and May, 1833—(*Lat.* 31.10 *N.*, *Lon.* 91.59 *W. nearly.*)

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date. 1833.	*Thermometer.* Morn.	Noon.	Night.	*Wind.*	*Weather, Remarks, &c.*
Feb'y 1	41	60	56	calm	clear—river rising half an inch a day
" 2	52	56	54	..	.. —cloudy evening
" 3	46	58	59	NE	.. —calm evening
" 4	42	64	62	calm	.. —peas up
" 5	43	58	61	..	..
" 6	52	61	56	..	cloudy all day
" 7	41	60	60	..	.. morning—clear day
" 8	37	66	64	..	clear—white frost
" 9	41	67	66	..	.. —lettuce, full large heads
" 10	47	68	66	..	.. morning—cloudy evening
" 11	57	73	71	..	cloudy morning—clear evening
" 12	62	70	70	S—high	.. —at night heavy rain
" 13	50	60	60	NW	clear
" 14	45	43	42	NE, morn'g	cloudy—rain all day—calm evening
" 15	40	43	45	calm	.. — .. .. —heavy showers
" 16	52	60	61	..	.. —river rising one inch a day
" 17	48	58	60	..	.. —showers
" 18		56		..	..
" 19		64		..	clear
" 20	50	58	56	NW—high	..
" 21	48	59	61	calm	..
" 22	52	60	59	..	cloudy
" 23	56	62	61	..	.. —rain and thunder
" 24	51	58	48	NW—high	clear—cloudy evening
" 25	38	52	52	calm	cloudy
" 26	47	60	56	E—light	.. —evening calm and rain
" 27	56	63	62	calm	.. —light showers all day [river risen this month 2 ft. 8 in.
" 28	66	75	70	S—high	.. —gale in the evening and night—at midnight wind N—a severe gale—
May 1	66	79	70	SE—strong	.. —light showers
" 2	63	71	73	calm	.. —heavy showers—night calm and clear
" 3	66	72	66	..	.. —light thunder showers—evening wind N and light
" 4	65	80	72	..	clear morning—evening heavy thunder showers—wind S and strong
" 5	63	80	71	..	.. .. SE, light
" 6	66	82	72	..	.. .. —night thunder and light showers
" 7	68	77	71	..	cloudy—evening light showers—wind SE
" 8	69	79	70	NE—light	.. —heavy rain at night and calm
" 9	66	73	70	..	.. —rain, and in evening light showers
" 10	68	82	72	calm	.. morning—evening heavy thunder showers
" 11	66	84	71	..	clear—evening light showers and heavy thunder
" 12	67	78	72	..	.. — .. heavy showers from N—thunder severe and at night
" 13	63	73	73	..	cloudy— .. .. .. —rain severe—Red River falling
" 14	67	80	77	..	clear all day
" 15	66	85	78	..	.. ..
" 16	71	81	76	..	.. ..
" 17	69	83	78	..	.. —evening wind S
" 18	72	82	72	S—light	cloudy evening—thunder shower from SW. severe
" 19	70	84	80	calm	clear
" 20	70	83	79	SW	.. —at night a gale from W—thunder and rain severe
" 21	68	82	72	W, morning	cloudy—calm evening
" 22	71	75	70	SE	.. —rain and thunder heavy all day and night
" 23	68	80	73	W, morning	clear—calm evening
" 24	69	81	73	calm	.. —light flying clouds all day
" 25	68	76	80	..	..
" 26	70	77	80	..	..
" 27	72	87	80	..	..
" 28	75	86	80	SW—light	..
" 29	72	79	73	N, morning	cloudy—rain and thunder severe in evening
" 30	72	84	79	calm	.. morning—clear day } Red River has fallen this month 4½ inches,
" 31	72	82	80	S	.. .. —evening clear } and is now 8 inches below high water mark

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

For the Fortnight ending July 8th 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	Hours.	Thermometr.	Barometer	Winds.	Strength of Wind.	Clouds from what direction.	Weather.
June25	6 a. m	63	29·60	NW	moderate	SW NW	cloudy —fair
	10	66	29·62	WNW—W	fresh	W by S	fair ..
	2 p. m.	70	29·62	WNW	..	..	..
	6	64	29·71	..	..	..	..
	10	60	29·75	..			cloudy
" 26	6 a. m.	59	29·80	NW—E	light	SW by N	rainy —rain
	10	62	29·82	E—WNW	faint	SW by W WNW	fair —cloudy
	2 p. m.	62	29·80	N	..	..	cloudy —fair
	6	61	29·82	..	..	..	fair
	10	60	29·90		..		cloudy —fair
" 27	6 a. m.	61	29·91	W by S	moderate	WSW	fair
	10	66	29·98	WNW	..	..	..
	2 p. m.	70	30·03	..	..	..	..
	6	66	30·05	NW	..	..	..
	10	63	30·09				..
" 28	6 a. m.	58	30·11	NE	faint	..	..
	10	66	30·15	WSW	..	..	..
	2 p. m.	75	30·10	SSW	light	..	cloudy
	6	70	30·09	S	faint	..	.. —fair
	10	66	30·09				fair
" 29	6 a. m.	61	30·14	N	light	WNW	..
	10	68	30·15	NE	..	..	..
	2 p. m.	73	30·14	WSW	..	..	..
	6	72	30·11	SW	..	..	..
	10	68	30·13	..	..	..	..
" 30	6 a. m.	67	30·14	..	..	..	..
	10	72	30·19	..	..	..	..
	2 p. m.	80	30·12	S	moderate	..	..
	6	75	30·09	..	..		clear
	10	70	30·08	SW	..		..
July 1	6 a. m.	70	30·07	..	..	..	fair
	10	78	30·05	..	..	..	..
	2 p. m.	85	30·01	SSW—S	..		clear
	6	81	29·98	S—SSW	light	NNW	fair—haze strip at WNW
	10	78	30·00	SSW	moderate		clear
" 2	6 a. m.	72	29·96	SW	..	WSW SW	cloudy, (low foggy scuds)—fair
	10	80	29·96	..	..	..	fair [bany at 5
	2 p. m.	86	29·80	S	..	..	.. —heavy rain at Al-
	6	74	29·76	S & variable	..	..	.. —cloudy at west—
	10	73	29·84	SW	light	WSW	cloudy—rain [rain at 8
" 3	6 a. m.	68	29·88	E	..	SW	.. ..
	10	68	29·88	NNE	moderate	.. NE	rain
	2 p. m.	66	29·87	..	..	.. N	.. —cloudy
	6	66	29·87	WNW	light	SW NW	cloudy
	10	65	29·90		..	SW	fair
" 4	6 a. m.	62	29·96	WSW	..	WNW	.. with scuds fr WNW
	10	70	30·05	..	..	..	.. .. ..
July 4	2 p. m.	76	30·06	WSW	light	WNW	fair, with scuds fr WNW
	6	72	30·06	..—NW	..	..	..
	10	68	30·10	NW	..	..	.. with scuds from NW
" 5	6 a. m.	63	30·20	NNW	..	NW	.. .. ..
	10	72	30·24	..	moderate	WSW NW	.. .. ..
	2 p. m.	78	30·22	NW—WNW	..	NW	.. .. ..
	6	75	30·20	WSW	..	..	..
	10	68	30·21	..	..		..
" 6	6 a. m.	63	30·23	SW	..	W by S	..
	10	72	30·25	..	..	..	..
	2 p. m.	80	30·20	S	..	..	..
	6	76	30·16	..	..	..	..
	10	70	30·10		..		cloudy —rain
" 7	6 a. m.	70	30·01	WSW	..	..	.. —fair
	10	77	30·02	SW—SSW	..	W by S WNW	fair
	2 p. m.	83	29·98	.. by N	..	..	.. —cloudy
	6	80	29·93	..	..	..	cloudy — fair
	10	74	29·94	..	light	W	fair
" 8	6 a. m.	70	29·90	SW	..	WSW	..
	10	73	29·90	WSW	moderate	W by S WSW	.. [at 4 45
	2 p. m.	87	20·84	..	..	..	.. —cloudy at 3—showr
	6	82	29·80	SW	..	SW	cloudy
	10	77	29·79	..	..	..	..

Average temperature of the week ending July 1st, 68°.17.
Do. do. do. 8th, 73°.03.

Arithmetical mean of the thermometer for the month of June, 66.58.

Maximum height of the barometer in June, 30.28 in.—Minimum, 29.62 in.—Range 0.66 in.

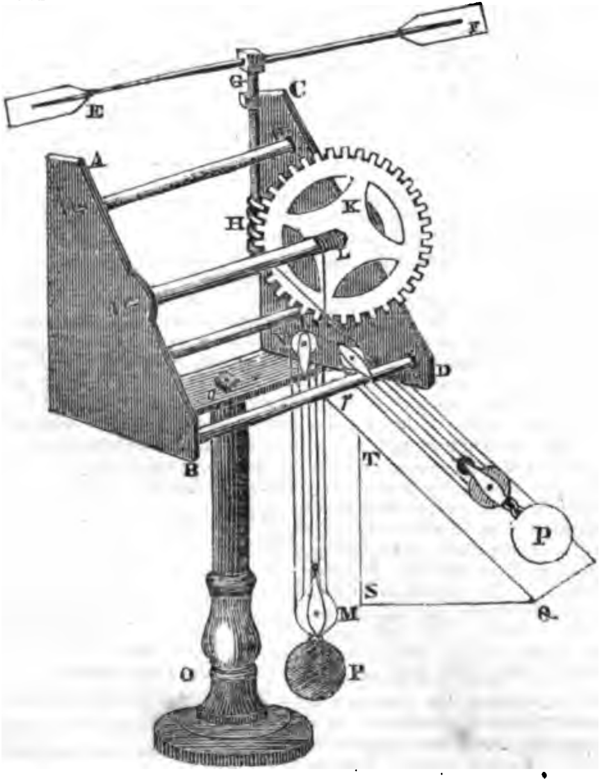
The observations of surface winds for June are as follow: From the North-Eastern quarter, including N. 15—from the South-Eastern, including E. 33—from the South-Western, including S. 45—and from the North-Western, including W. 47.

The observations of the highest current of clouds have been as follow: From the North-Eastern quarter, 0—from the South-Eastern, 1—from the South-Western, 40—and from the North-Western, 68.

The prevalence of North-Westerly winds, both at the surface and in the upper current, have been greater than has been observed in any month during the present year. An unusual quantity of rain for the month of June has also fallen.

On the 2d day of June, tornadoes, hail-storms, and thunder-storms, appeared at various places in different parts of the United States. In the states of Maryland and Pennsylvania the most violent of these appeared in the afternoon; in the state of New-York and in New-England, in the evening. On the night previous a heavy tornado occurred in Illinois. Since that period, storms of this character have occurred in a few instances, particularly on the 17th, when a most severe tornado passed over Delaware county.

The heavy rain which fell in this city on the evening of the 24th June was some hours later in its occurrence in the eastern parts of Long Island Sound, as appears by the reports of the Providence steamboats. During this rain the wind was from ESE, being a direction nearly opposite to the progress of the rain. Heavy rain also fell at Cincinnati on the 23d and on the morning of the 24th, which may have been connected with that which fell here on the night of the 24th



A Machine in which all the Mechanical Powers are united.—The preceding figure represents a machine in which all the simple mechanical powers are combined.—It consists of a frame A B C D, fastened upon the stand O *o* by the nut *o*, and kept together by the pillars V W and B *q*. The piece E F is first fitted to the frame, having vanes, E F, which may be either moved by the wind, or by a cord fastened at F. This part represents the lever, whose fulcrum is G. A perpendicular axis G A is joined to this lever, and carries the endless screw H, which may be considered as a wedge. This endless screw works in the teeth of the wheel K, which is the wheel and axle; and when K is turned round, it winds upon the axle I L the cord L M, which, passing round the tackle of pulleys M N, raises the weight P. In order to include the inclined plane in this combination, we must add the plane R Q *r q*, and make it rest on the ground at Q R, and on the pillar B *q* at *q r*. When the weight P is placed on this plane, the power will be farther increased in the ratio of Q T to T S. The power gained by this combination will be found, by comparing the space described by the point F with the height through which the weight rises in any determinate number of revolutions of F.

"The contract for the bridge over the Potomac has at last been signed by the Secretary of the Treasury on the part of the government. It binds the contractors to make the bridge for $1,150,000, equal to about one third of the sum which I have estimated it will cost. The contractors are of Pennsylvania."—[Jour. of Com.]

NEW-YORK AMERICAN.

JULY 6, 8, 9, 10, 11, 12—1833.

LITERARY NOTICES.

The Whigs of Scotland, or the last of the Stuarts—a historical Romance. 2 vols. J. & J. Harper, N. Y.—This is the production, we presume, of an American—sprung from the race whose sufferings and heroism are the chief theme of its pages, and to whose descendants the work itself is dedicated. It is certainly indicative of very considerable talent, though not, as we should judge, of talent practised in this particular walk of literature. The incidents and plot are confused and inartificial—and dialogues abound too much. It is safer and easier generally to relate what it is desired to communicate, than to let the actors tell their own story, each in his appropriate character and language. The Scotch dialogue is too frequently introduced—not always naturally either—but rather as if the author were intent upon proving his legitimacy, as a Scots descendant, by his familiarity with the tongue of his sires. Notwithstanding these objections, this is a work which will be read and remembered, and which will dispel some of the attractions thrown around the character of Claverse, by the pen of Scott, and dissipate some of the prejudices derived from the same source against the uncourtly and austere Whigs.

Memoranda of a Residence at the Court of London, by Richard Rush. 1 vol. 8vo. pp. 460. Philadelphia: Carey, Lea & Blanchard.——Mr. Rush, as most of our readers know, was for eight years, from 1817 to 1825, the American Minister at the Court of St. James, and was then recalled to be made Secretary of the Treasury at home. His opportunities therefore were the very best; and the time he spent in England—an element more necessary in the formation of an accurate judgment of the English society and nation than of almost any other—sufficient to enable him to correct many of the errors and preconceived opinions with which Americans too frequently visit that country. Under these circumstances we need hardly add that Mr. Rush has made a most interesting book—in which, mingling an account of official negociations with personal anecdote, and general views of the society he sees, he presents a very captivating view of England. We could have wished that he had continued his memoranda—for those now published scarcely extend beyond the first year of his residence. Perhaps he may yet do so; at any rate, we are sure the welcome which his countrymen will give to this volume will afford him a fair motive for continuing the subject. Of the style of the work, our readers cannot fail to have formed a favorable opinion from the extracts published by us some week or two ago, taken from the London Literary Gazette; and we have marked other extracts for future publication which will confirm this opinion. At present and for the present we dismiss this volume with commendations of the good style in which it has been got up by its Philadelphia publishers. A book, however interesting, becomes more readable in such type and on such paper as those of the volume before us.

Anthon's new edition of Lempriere's Classical Dictionary: 2 vols. 8vo. N. Y. G. & C. & H. Carvill.—This is a remarkable publication, and one which does great honor to the German industry, and German scholarship—and German in both these connexions means most elaborate and extensive—of the editor, the Jay Professor of Greek and Latin in Columbia College. It is in fact almost a new work, preserving the original form and general arrangement adopted by Lempriere, but enlarged to twice the original size, notwithstanding that much is omitted that was immaterial—such as mere names of individuals or places unconnected with any historical incident, or peculiar characteristic—in the work of *Lempriere*, and a good deal in descriptions of mythological personages and others, that should never have been printed in pages destined for the use of young persons. Indeed, these two bulky volumes may be said to furnish a complete Compend of Classical Antiquity—of the geography, the habits, the literature, and the commercial and economic usages of the people known under this general designation—as well as the personal narratives of all the distinguished individuals among them all, who have come down to the present times in the records of those so long past. All scholars, and all who desire to be so, will have frequent occasion to consult these pages, and to be grateful for the labor which has collected in them the results of researches, that few have either the ability or the industry to make. Nor must the publishers, who proposed to the editor to undertake this work pretty much upon his own terms, go without due commendation for their liberality, and for the accuracy with which the book is printed.—Altogether it is a scholarlike and most creditable publication.

Phrenology in connexion with the Study of Phisiognomy; by J. G. Spurzheim; 1 vol. 8vo; *Boston*, Marsh, Capon & Lyon.—This is a curious and entertaining book, and to those who repose but little faith in the science of which it treats, will prove in more ways than one instructive. The illustrations of the study are chiefly drawn from celebrated characters, and much learning as well as judgment is displayed in making the application. We proceed at once to give an instance in passing, adding afterwards such remarks as occur to us. The following observations are accompanied with the portraits of the two celebrated characters of the French Revolution to which they refer:

Danton and Malesherbes.—It is much to be regretted, in a phrenological point of view, that many of the individuals who displayed great mental energies during the French revolution, are represented, in their portraits, either with perukes or long hair, which prevents their cerebral organization from being distinctly seen. The difference between the two heads represented in this plate is, however, conspicuous enough. In fig. I, Danton, the upper part of the forehead is flat, and the head generally is broad rather than high; it is particularly large laterally above the ears; the organs of benevolence and of veneration are small; those of the reflective powers but moderate. In fig. 2, Malesherbes, on the contrary, all these cerebral parts are strongly marked; the whole head is very elevated, and much higher than it is broad.

Now Danton was renowned for his strong animal feelings, for his audaciousness, impetuousity, and vehement elocution; for his bold conceptions, and violent means of execution; but at the same time his incapacity as a leader, under trying circumstances, as the director of such a desolating tempest os the French revolution, is admitted.

Malesherbes, on the other hand, was a philosopher, in private life as well as at the head of the government, in prosperous and adverse circumstancea, in easy and difficult sitsations. He was devoid of all party spirit, without ambition, unostentatious, and the foe alike of despotism and of licentiousness, by whatever name entitled; but he was the friend of truth, reason, moderation, and peace; the admirer of benevolent and generous sentiments. His speeches are rare models of truth unfolded without any mixture of dissimulation, without any of the false coloring of exaggeration, and without any tinge of irreverence. They abound with sound reasoning, and shew frequent traces of unobtrusive firmness and of respectful sincerity. The grandeur of soul with which he bore his proscription, and the magnanimity he displayed in defending the unfortunate Louis XVI. of France, at the expense of his life, are facts generally known and universally admired.

How is it possible to overlook the influence of the brain on the manifestations of the mind! Is it not lamentable to see so little care taken to preserve specimens of the principal of nature's works; I mean, of the real celebral configuration of those who excel or are eminent in any way?

"By using these means," observes our author, "more will be done in advancing the knowledge of man, than has hitherto been effected by all the learned societies, and all the schools of philosophy that ever existed." One can credit this, and still think that no great advances will ever be made in that branch of knowlodge, which, while all others have been progressive, we imagine pretty much in the same state as when Theophrastus wrote his characters three centuries before the Christian era.

The name of *Oberlin*, the excellent pastor of "Five Villages among the Voguesian Mountains," is familiar to our readers, as they may recollect having repeatedly within the last two years, met with some observations regarding him in these columns. Spurzheim's comments upon his head will be read with interest:—

Fr. Oberlin, Pastor of Five Villages among the Voguesian Mountains.—This is an extraordinary head, a form that a phrenologist loves to contemplate. There is little brain at the basis, whilst all the upper and front regions are unusually large. The posterior sincipital portion being also in great proportion, independence of mind, steadiness and perseverance in every pursuit and undertaking, will be prominent features in the exalted moral and religious character indicated by the rest of the head. Self-esteem will here become dignity, benevolence and veneration be blended with, and made inseparable from wisdom. In a word, such a cerebral organization approaches in excellence the idea which phrenologists are apt to form of that of Jesus.

This model of christian piety found the inhabitants isolated in five different villages, poor, ignorant, agitated by henious passions, and without the most necessary means of comfortable existence. But by laboring unremittingly he, by degrees, succeeded in changing their wretched condition. He taught them to cultivate potatoes, flax, and such vegetables as succeeded best in light and sandy soils. He laid out a nursery, in order to supply the peasants with trees of various kinds, and showed them the advantages they would reap by attending to their cultivation. He gave instruction to the children himself, teaching the younger to read, write and calculate; while he lectured to the more advanced in age, upon the cultivation of fruit trees, the principles of agriculture, and the noxious and useful qualities of the plants which the country produced. He particularly accustomed them to order and cleanliness.

The good pastor, with his parishioners at his back, actually worked at the formation of convenient ways from one village to another, and of a good and ready communication with the great road leading to Strasburg. To this city he sent children to become artisans, such as tailors, shoe-makers, smiths and carpenters. a female to learn midwifery, and a promising youth to study medicine and surgery. He himself had some knowledge of the healing art, used the lancet in cases of necessity, and preserved the most necessary remedies in his house, which he distributed as he thought they were required. He devoted his talents, labors, and whole life to the welfare of his flock, he persuaded a benevolent family, Legrand, to favor his philanthropic views, and to transfer their manufactory of ribbons from Basle to his parish, and to furnish employment to the people.

Besides his vast care of all worldly concerns, he paid the greatest attention to moral and religious instruction, which he enforced in the most effectual manner by deeds as well as words. He ended a law suit in which the parish had been involved for many years, and he brought good will and mutual love to dwell with his flock, instead of discord. He well deserves the title *father*, which his parishioners have given him. Their love and gratitude, surely will not terminate with his existence, and the good he has done will live long after he is dust.

The lithographic portrait which accompanies this character, is that of a venerable man of seventy, with a high furrowed forehead, a long flowing beard, and altogether of a most patriarchal aspect. The face, however, does not want decision, and one might almost think the brow, which is heavy, somewhat too stern for the gentle character of the other features.

These historical illustrations of Phrenology are of course very striking; but we do not think they possess the particular interest which attends the immediate application of its laws to obscure individuals by Spurzheim himself. Many instances of these are given in the biography of that individual by Mr. Ca-pen, which forms the first part of the work. Some of these relish not a little of the marvellous, as we will give our readers an opportunity of judging by making some further extracts from the work with additional comments, upon another occasion. *

Observations on Insanity; by J. G. Spurzheim, M. D. with an Appendix, by A. Brigham, M. D. Boston, Marsh, Capin & Co.—There is hardly a study which possesses the interest like that of the intellectual phenomena attending a deranged state of the mind; and it is a branch of inquiry upon which, if we mistake not, Dr. Spurzheim is thought to have thrown more light than almost any modern investigator. The anatomical and physiological investigations incident to his favorite study of Phrenology, having given him unusual opportunity of observing the functions of the brain, and tracing the effects of disease upon its different parts, the result is before us in a work, whose acute observation, clear, methodical arrangement, and happy illustrations, will recommend it at least to the general reader, if not to the practitioner of medicine. The bases of his doctrines Dr. Spurzheim claims for himself and Gall as discoverers; but he does not hesitate to avail himself very liberally of the labors of others, of Dr. Rush's admirable work particularly, in enforcing and impressing them upon his readers.

Too much praise cannot be given to the publishers of this edition of Spurzheim's writings—(there is also another volume accompanying the two we have noticed, containing the answer of the great Phrenologist to objections made to his doctrines in Great Britain,) for the very handsome style in which they are printed and got up, though it is a matter of some regret that the edition had not been made uniform. *

Emma, a Novel, by Miss Austin; 2 vols.; Carey, Lea & Blanchard.—As we repeatedly, before Mess. Carey & Lea commenced the republication of these old favorites of novel readers on the other side of the water, took occasion, when noticing newer works, to recommend Miss Austin's excellent novels for reprint, we recur with pleasure to each successive one that now comes before us. *Emma* in interest is decidedly inferior to the rest; but, though wanting in incident, and having neither any very striking scenes or characters to recommend it, it is still admirably written, and has that same truth to nature which distinguishes the other fictions of the same author. Unless it be Miss Edgeworth, we can call to mind no writer who could have made up so amusing a book from the every day characters and idle gossip of a country village. Still we cannot bring ourselves to like the admired heroine of this novel, and we rather think that Miss Austin failed in drawing the character of Emma, which is evidently a favorite with her, and which is meant for a very complete portrait. She is meant for a very sensible, well educated and high principled girl, but with a good deal of attraction about her; such a one as should have stopped Cœlebs on his travels, before they were well begun. But she is in fact a cold, conceited pattern-woman, with just susceptibility enough to flirt with a stranger on a week's acquaintance, and find out that she is in love with a man, whom she had known all her life, when on the point of losing him. She is amiable, because her inclinations are studied by all around her; and those inclinations are generally reasonable, because her character wants the vivacity to prompt extravagance, and the best one can say about her is that she is natural. That is one of the thousands of her sex that Nature, Art & Co. manufacture to order, and exhibit at watering-places, and other matrimonial bazaars for all well-disposed gentlemen of a certain age in search of a wife. She is a very safe woman,—such, as if one had been betrothed in his cradle, he might perhaps compound for as a companion for life, but such as, in spite of all her beauty and accomplishments would never inspire half the passion that her weak but fond and pretty little companion "Harriet" might create in even the most sensible man. It's a shame, however, to quarrel with a woman who thus backs every word we are saying against her. "There is no charm equal to tenderness of heart," said Emma to herself. "There is nothing to be compared to it. Warmth and tenderness of heart, with an affectionate, open manner, will beat all the cleverness of head in the world for attraction." [So it will. Who likes an intellectual doll. It is but a little better than a complexional one.] "It is tenderness of heart which makes my sister so generally beloved. I have it not, but I know how to prize and respect it. Harriet is my superior in all the charm and felicity it gives," &c. &c. and more in the same strain; proving how completely the fair speaker sympathizes with us in our opinion of herself. This seems a narrow view of a book, to treat of a single character only; but we have spoken sufficiently of the work in general terms, and we must say a word or two about the conception, which Miss Austin has embodied in Emma.

To be brief it is time thrown away upon such heroines: they do very well in their way in real life—to make a Lady Byron or Donna Inez of—but they have no business in books, except among the supernumeraries. They are uninteresting, because you know how they will act under every possible circumstance or situation; and they are uninstructive, because they illustrate no principle in character or education.—There are two objects, we conceive, in delineating the heroine of a work of fiction, which should be ever kept in view. The one is to show the force of character over circumstances, and the other to prove the effect of education in modifying the natural disposition. There must be a struggle of some kind, an occasional conflict between principle and passion, to constitute a forcible moral lesson.

We subjoin a few specimens of Miss Austin's entertaining way of treating common place subjects:

A School—not a seminary, or an establishment, or any thing which professed in long sentences of refined nonsense, to combine liberal acquirements with elegant morality upon new principles and new systems—and where young ladies for enormous pay might be screwed out of health and into vanity—but a real, honest, old-fashioned Boarding-school, where a reasonable quantity of accomplishments were sold at a reasonable price, and where girls might be sent to be out of the way and *scramble* themselves into a little education, *without any danger of coming back prodigies.*

Just observation:—

The older a person grows, the more important it is that their manners should not be bad—the more glaring and disgusting any loudness, or coarseness, or awkwardness becomes. *What is passable in youth, is detestable in latter age.*

Touching community of feeling:—

"My poor dear Isabella," said he, fondly taking her hand, and interrupting, for a few moments, her busy labors for some one of her five children—"how long it is, how terribly long since you were here! And how tired you must be after your journey! You must go to bed early, my dear—and I recommend a little gruel to you before you go. You and I will have a nice basin of gruel together. *My dear Emma, suppose we all have a little gruel.*"

A fresh acquisition to village society:—

A week had not passed since Miss Hawkins's name was first mentioned in Highbury, before she was, by some means or other, discovered to have every recommendation of person and mind; to be handsome, elegant, highly accomplished, and perfectly amiable: and when Mr. Elton himself arrived to triumph in his happy prospects, and circulate the fame of her merits, there was very little more for him to do than to tell her Christian name, and say whose music she principally played.

Aspect of a country town:

While she was still hanging over muslins and changing her mind, Emma went to the door for amusement. Much could not be hoped from the traffic of the busiest part of Highbury;—Mr. Perry walking hastily by, Mr. William Cox letting himself in at the office door, Mr. Cole's carriage horses returning from exercise, or a stray letter-boy on an obstinate mule, were the liveliest objects she could presume to expect; and when her eyes fell on the butcher with his tray, a tidy old woman travelling homewards from shop with her full basket, two curs quarreling over a dirty bone, and a string of dawdling children round the baker's little bow window, eyeing the gingerbread, she knew she had no reason to complain, and was amused enough; quite enough still to stand at the door. A mind lively and at ease can do with seeing nothing, and can see nothing that does not answer. *

We are much in arrears in our notices of books received: but they shall have their turn.

FOREIGN INTELLIGENCE.

The Caledonia from Liverpool brings London papers to the 1st June. The European accounts by her are quite pacific. The Belgian question is settled so far as that all hostilities are to cease, and every thing is to be restored to the footing before the *quasi* war—to await the decision of a final and definitive settlement to be negotiated under the auspices of Austria and Prussia. Thus has ended where it began, this absurd interference of Europe in what may in some sense be called a private quarrel between Holland and Belgium. Protocols without number, of five Powers, preceded the armed intervention of France and England; and after the useless shedding of much blood at Antwerp, the capture of many vessels at sea, the interruption of commerce by embargoes, Protocols under the sanction of *two*, instead of *five* Powers, are again to be resorted to.

In the East there is also peace, the Commander of the Faithful having yielded to the last demand of his rebel Egyptian vassal—for the cession of Adana—so that, until Russia is quite ready to consummate her plans of reducing the Porte itself to be her vassal, there will be tranquillity in that quarter.

In Belgium, there had been partial disturbances connected with political heats, and in the north of France, in the coal region about *Valenciennes* the colliers had turned out for wages we presume, and were to be suppressed according to invariable usage in France, whether under citizen, imperial, or Philippine sway,—by the bayonet.

The royal brothers of the house of Braganza are still in *statu quo*. *Pedro* beseiged, but boasting,—and now possibly with more reason than heretofore—*Miguel* beseiging by proxy, and meanwhile persecuting, incarcerating and executing here and there, unbelievers in his divine right.

In England, the storm of domestic strife is lowering. The manly tone of English thinking has, it is to be feared, been so far perverted, in a portion at least of the public mind, as to justify the Coroner's jury in their verdict in the case of *Cully*, the policeman. This verdict was indeed set aside by the Court, but the indication afforded by its approval any where, is one of disaster to England. The negro emancipation question was under discussion in the House of Commons; and the plans of the ministry, somewhat modified, but in no essential feature altered, would undoubtedly be carried. It is the voice of the people and of the government, against which the struggles of the West Indian interest will be powerless.

Berlin, May 14.—The negotiations which have just been opened here upon the Belgo-Dutch question proceed with activity. Plenipotentiaries Extraordinary are expected here from Russia and Austria to take part in it. This diplomatic assembly may assume the character of a Congress to terminate a difference which may at any moment disturb the peace of Europe. It is not yet known whether England and France will send Ministers to it.

"It seems that new fears are entertained respecting the maintenance of tranquility in Poland. The Russian government has received information from Paris, that a conspiracy has been formed to make a fresh attempt at revolutionizing that country. It is even said that letters have been intercepted, in which a plot has been discovered against the life of the Emperor Nicholas. This last report wants confirmation. The Emperor Nicholas has postponed his journey abroad, because the affairs of the East require his presence at St. Petersburgh.

TURKEY.

PARIS MAY 28.—The Government have received dispatches from Constantinople, dated the 8th inst. from which it appears that the Sultan had, three days before, yielded to Ibrahim the contested territory of Adana. Lord Ponsonby, the British Ambassador, arrived at Constantinople on the first of May. Count Orloff, the Russian Ambassador Extraordinary and Commander-in-Chief of the Russian expedition, landed at Bujukdere on the evening of the 5th. The following is an act of Amnesty, dated May 6, granted by the Porte to all the authorities of Asia Minor, and establishes the cession made to Mehemet Ali and Ibrahim of the Pachalics of Syria and the Government of Adana:—

Order addressed to the Viziers, Mirimirans, Mollahs, Cadis, Naibs, Mutsellims, Vaivodes, Ayams, Notables, and other functionaries of the different parts of Anatolia.

The assurance of fidelity and devotedness given me at length by the Governor of Egypt, Mehemet Ali Pacha, and his son, Ibrahim, having been acceptable to me, I have granted them my imperial benevolence. The governments of Crete and Egypt have been confirmed to Mehemet Ali, and in compliance with his earnest desire, I have granted to him the departments of Damascus. Tripoli, Syria, Seyde, Safed, and Aleppo, the district of Jerusalem and Naploose, with the conducting of the Pilgrims, and the command of Djidda. His son, Ibrahim Pacha, has acquired a new title to the Cheik-al-Haram of Mecca and the district of Djidda; I have also acquiesced in his demand of the department of Adana, with the title of Mohassil. Following the equity, humanity, and clemency with which God has endowed me, I order all persons in authority in the different parts of Anatolia to refrain from pursuing the Notables and inhabitants, and to bury all past events in oblivion. You, on your part, will announce my generous intentions to all who are in authority under you; you will endeavour to assure the public mind on this subject, and you will endeavour to obtain prayers in favor of my august person from the people, whose welfare God has entrusted to my hands. It is in order to make you acquainted with these things that I have issued the present firman, in conformity with my hatti scheriff. You will, therefore, make known my sovereign will to all whom it may concern, and you will obtain their prayers in my favor. Be careful that you comply with it without molesting any person whomsoever, contrary to my supreme desires."

THE AMERICANS, BY AN AMERICAN IN LONDON, is the title of a volume recently published in London, of which the Spectator of that city thus speaks:

THE AMERICANS.—"Save us from our friends!" Mr. Colton might have spared himself all this trouble. This work is a foolish but elaborately lively volume about Mrs. Trollope and Captain Hall. All "scandal about Queen Elizabeth." The American in London ought to be above such dirty work as exploding the calumnies of poor Mrs. Trollope, and the not less antiquated *Quarterly Review*.

All that was required on this occasion had long since been done by the friends of America in England; and had it been left undone, a thousand such volumes of laborious gayety as this of Mr. Colton would have left the matter *re infectâ*. He might simply have contented himself with the remarkable success of Mr. Stuart's work on the United States, joined to the reflection that the only charm of that book was its truth.

Parliamentary returns have been just printed of the number of American and British ships entered inwards into the port of Liverpool from New York from the first of January, 1832, which present the following statement:—American ships 68, tonnage 35403: British ships 23, tonnage 7178. There were imported into Liverpool last year from the United States 682,038 bales of cotton, of which number 375,567 bales were imported in American, and 206,471 bales in British ships.

A loan for the State of Alabama has recently been negotiated, to the amount of 3,500,000 dollars, bearing an interest at 5 per cent. from the 6th inst., a portion of which is about to be introduced into this market by Messrs. Thomas Wilson & Co., at the price of 96 per cent. One of the conditions of the contract is, than the loan shall not be paid off earlier than the year 1863. The price of 96 in London, at the present rate of exchange between the two countries, is equivalent to about 104 in New York, which forms, therefore, the real rate at which the loan is taken. The dividends will be made payable either in London or in New York, at the option of the holders of the stock. Besides Alabama, several other States of the American Union, as New York, Pennsylvania, Louisiana, Mississippi, Onio and Virginia, have separate debts, and, so far as the prices are any criterion which the shares in them bear in this country, they all enjoy a considerable share of credit.

Great excitement appears to prevail in the island of Jamaica in consequence of two duels. Mr. Beaumont, a member of Assembly, and an opposer of the violent acts of the friends of slaver,, received two challenges—one from Mr. Stamp, whom he shot, the second from Major Gen. Robertson, whose fire he received, but declined returning, and the parties left the ground satisfied.

[*From the Journal of Commerce.*]

LATE AND IMPORTANT FROM MEXICO.—We are indebted to a friend for Vera Cruz papers to the 14th June inclusive, received by an arrival at N. Orleans. They bring intelligence of a formidable *attempt to revolutionize the government*, which so far succeeded that President Santa Anna was taken prisoner, though he afterwards effected his escape, and made good his retreat to Puebla, where he arrived on the night of the 12th-13th.

It appears that a revolutionary party was first organized at or near Morelia, 200 or 300 miles west of the capital, the object of which was to prevent encroachments upon the Catholic religion. Santa Anna took a body of troops and marched against them; but when arrived near the scene of the insurrection, they all mutinied under the direction of Gen. Arista, made Santa Anna prisoner, and put him in confinement.—He afterwards escaped to Puebla, as will be seen below. The result will be, from all we can gather, that Santa Anna will regain his authority.

SUMMARY.

HOLT'S HOTEL has another attraction added to it, which the following paragraph from the Gazette will explain:

Mr. Holt.—This enterprizing individual, having for the last six months experienced in his mammoth house, all that he could wish by way of patronage, is now likely to realize his wishes in procuring a supply of pure water, not only for his own establishment, but for the lower part of the city. Late on Saturday afternoon, his drill, having passed through 510 feet of rock, the surface of which was 130 feet below the ground, (making a total depth of 640 feet) sunk suddenly into a depth of water of 2 feet.) If he proceeds no farther all his wishes and expectations will be satisfied. This news equals in importance to the citizens of New York anything which has been received from Europe by the Caledonia.

Col. Thayer arrived in this city yesterday from West Point, he comes to direct the construction of the fortifications for the defence of this harbour, involving an expenditure of rising $1,200,000. The completion of these works will add to the many obligations the country already owes him for his long and successful direction of the useful institution, the superintendance of which he has just resigned.—[Boston Daily Advertiser.]

A party of 300 men, belonging to Andover, N. H. recently started out on a hunting excursion. They started seven bears, but succeeded in capturing one only, for the want, says the Concord Statesman—"of *more* men and better order."

The extraordinary number of 15 vessels were lost this spring in going to Quebec, from various ports in Great Britain. Of this number, 10 were sunk or lost in the ice, 3 went ashore, 1 was struck by a heavy sea, and sunk, and 1 was abandoned. The number of lives lost was 215.

COLONIZATION SOCIETY.—The sum of $166 83 cts. was collected on Sunday morning in St. Thomas Church, for the benefit of the American Colonization Society, after an eloquent and appropriate discourse by the Rev. Dr. Hawks.

The Portland Advertiser, in noticing the arrival of Jack Downing in that city, represents him as a strange looking man, with big whiskers, full face, dark eyes, short legs, and a thick body. Major Dawning informed the editor, there being so many about the country stealing his name, he only knew himself by a scar on the left arm.

Mr. Lucas Knapp, of the town of Austerlitz, has a team of dogs, with which he is in the habit of riding out daily. The dogs are but about fourteen months old, and the last December, when the roads were bad, they traveled from the residence of Mr. K. (who is a cripple) to Winchester, Conn., a distance of *sixty miles*, in one day, drawing him in a small wagon which he has for that purpose. He returned by the same novel conveyance in the same space of time.—[Columbia Sentinel.]

(*From the Washington Globe of Tuesday.*)

We regret to learn from Arkansas, that the rains have brought upon that young and thriving Territory a devastation like that which marked the overflowing of the Ohio last year. The misfortune is, that danger does not subside with the floods. The great overflow of waters in this hot season of the year, brings, as a consequence, diseases as fatal to human existence, as the deluge itself to vegetable life. Pestilence and famine both now threaten the Territory.

Extract of a letter from Little Rock, Ark., dated June 19, 1833:

"I regret to inform you, that nearly all the settlements upon the Arkansas river have been destroyed by the freshet, and that much distress will be suffered in consequence, by our own citizens, as well as by the Quapaw Indians. The corn crops upon the river have been ruined, and vast bodies of improved lands have been entirely washed away. The mud and water will render all the river lands which are left, unfit for cultivation for at least one year; and indeed I fear this Territory has sustained an injury, from which it will take several years to recover."

The steamboat Yellow Stone, Capt. A. G. Bennett, returned on Friday last from her voyage up the Missouri, with a rich cargo of skins of various kinds for the American Fur Company. The crew were all in fine health and spirits. The Yellow Stone ascended the Missouri to the mouth of the river from which she derives her name. We understand that the Assinaboin, the other boat belonging to the same company, proceeded still higher up, and will probably go to the head of steamboat navigation.—[St. Louis Republican.]

AMERICAN INSTITUTE.—We are requested to state that the sixth annual fair of the American Institute will be held in this city next October for three days, beginning on the 15th. Premiums will be awarded as usual, and articles intended to be entered for premiums should be delivered by the 14th of Octtober.

Manufactory.—We are pleased at the feeling which is about to take hold of the citizens of this State in relation to manufactures. A steam engine has just been made in Pittsburgh for a cotton manufactory which is about to be put into operation in Greensborough. We are anxious to see it succeed, together with many others, not only of its kind, but also of divers other branches of home industry and enterprize. Manufactures will take a start here after a while, and then we shall hear less about *robbery* and oppressions for the benefit of the north.—Then we shall see some unprincipled politicians fall into their old track, and hear them assert that they were always favorable to manufactures. The country will soon find out the utility of manufactures, after they have seen their practical effects, and then know who were labouring for the best interests of the State.—[Salisbury N. C. Journal.]

☞ The last number of the Courtland (Alabama) Herald contains an elaborate description of that town and vicinity, from which the following brilliant extract is taken:

"The pearly mountain stream BIG NANCE, rapidly flows and encircles the town on two sides, the margins and commons of which afford the finest rural retreats imaginable amidst a thousand flowerets gay and songs of sporting birds arrayed in plumage fine as rainbow's tints."

Diamond cut Diamond.—A six-foot Vermonter lately entered a store on one of our principal wharves, in search of employment. He could do any kind of *chore*, he said, and boasted much of his strength. "Stout as you are," said the clerk, "I'll bet $10 you cannot carry that bag of salt (pointing to a very large one) twice across this store and back again and *never* lay it down. The Yankee stood for a moment scratching his head and gazing at a rope with a hook at its end which dangled through a scuttle, and then accepted the wager. He shouldered the bag with the utmost ease, carried it twice backward and forward, and then hung it upon the hook aforesaid. "Mister," said he, "I guess I'll trouble you for that are ten. I didn't lay it down—I *hung it up*." The clerk, much to his dissatisfaction, handed over the money, and the Vermonter left the store, saying, "catch a weasel asleep! Not so bad a days work. Better than chopping logs!" etc.—[Boston Galaxy.]

Lake Winnapisiogee.—The first attempt to navigate this Lake by Steam, was made on the 4th inst. when it was crossed by the steamboat Belknap. New lines of stages have been established at each extremity of the Lake, and an active and valuable communication between the lower and upper part of New Hampshire, and a portion of Vermont is anticipated as the result.

Pensacola, June 20.—*Loss of the Brig Ontario.*—The brig Ontario, Captain Whittlesey, of and from New York, bound to this port, with a cargo of lime for the fort at the mouth of our harbor, was discovered on the 10th inst. when about 140 miles from the land to be on fire. All efforts to save her were immediately made, but without success. She succeeded in reaching the land, and consequently no lives were lost. Her sails and a few small articles were saved. We understand the property was partly insured.

The stock of the new Whaling Company in Poughkeepsie was all subscribed during the opening of the books at that place on Monday last. The enterprize and capital of the towns on the Hudson are seeking a new source of investment and profit. Hudson led the van in this trade, with great success; and Newburgh and Poughkeepsie have followed the example promptly, and with an equal prospect of pursuing it to advantage. They have all our best wishes for an extended commerce in this as in other respects, and for prosperous returns.—[Albany Argus.]

Arrival of the Brandywine.—The U. S. frigate *Brandywine*, 44, Commodore James Renshaw, arrived at this port yesterday from the Mediteranean, ane last from Maderia, in 37 days—officers and crew all well. The following is a list of the officers attached to the Brandywine: James Renshaw, Commander; Lieuts. J. L. Saunders, Alexr. Slidell, Chas. C. Turner, and Murray Mason; W. H. Norland, passed Midshipman; Bailey Washington, Surgeon; Geo. Clymer, Assistant do.; John B. Cutting, Acting Master; Thos. S. English, Capt. of Marines; F. A. Armisted, Lieut. do.; E. C. Canning, Schoolmaster. Midshipmen—R. P. Welsh, G. F. Emmons, W. F. Barr, C. F. M'Intosh, R. A. Cassin, J. C. Fraham, John J. Thurston, W. Craney, D. M'Dougal, A. W. Brevort, J. Alden, John I. Williams, W. G. H. Robertson, J. L. Ring.—John Raynolds, Boatswain; Nathan B. Pede, Sailmaker; Chas. Boardman, Carpenter; Thos. Riley, Gunner; J. D. Gibson, Purser's Steward. *Passengers.*—Lieut. Saml. W. Le Compte, and A. G. D. Brown.

[*From the Washington Globe of July* 4, *Extra.*]

The President, accompanied by the Vice President and Secretary of the Navy, his Private Secretary, and Col. Earl, arrived in this city at 10 o'clock this morning. After reaching Concord, he found that his strength would not enable him to undergo a repetition of the labors which the various engagements he had made, would require of him. And the effect of further exposure to the North-Eastern winds, it was feared, might prove permanently detrimental to his constitution, after his indisposition at Boston.—He was, therefore, under the necessity of giving up his journey, without going to Portland, in Maine, which he intended to have made the termination of his tour at the North.

The President left Concord, for Washington, on Monday, the 1st instant, after breakfast, and reached this city at 10 o'clock this morning, accomplishing a journey of 474 miles in three days. His strength has recruited considerably since his return. The ordinary fatigue of a journey in the stages, relieved by the repose obtained in the steamboats and rail road cars, was found light in comparison with the personal exertion necessary to sustain him throughout a succession of days, in exchanging salutations and greetings with the immense number of his fellow citizens who thronged to meet him. He would have found it impossible to have borne up so long under the fatigue, but for the inspiring animation imparted by the enthusiastic kindness of his countrymen.

A Novel Case.—*Cheng* and *Yang*, the Siamese twins, have been tried in Trumbull county, Ohio, for an assault and battery commited on an old and respectable citizen. The defendants plead guilty, and were *each* fined five dollars and cost. The case is stated in the Warren News Letter, of July 2.—It is strange that where the offending party is one, by an indissoluble and natural bond, that they should be severed in judgment. It is a new precedent.

Rencontre.—We have received a letter from a friend in Charlottesville, (Va.) giving the particulars of a very unpleasant and personal rencontre between W. C Rives, of the U, S. Senate, and Thomas W. Gilmer, of the House of Delegates, which occurred at that place on the 1st. The matter will probably be made the subject of publication by both parties; but we abstain from saying more at present, than that Mr. R accused Mr. G. of some insincerity, which the latter repelled—that upon their meeting, one attempted to thrust his hand in the other's face, which was repelled by the use of a horsewhip, &c. The Court being in session they were immediately summoned before it, and both bonnd over to keep the peace in the sum of a thousand dollars.—[Alexandria Gazette.]

Tornado at St. Louis, (Mi.)—A letter of Friday, 29th ult., furnishes the following account of a remarkable hurricane in St. Louis:—"Last evening about 9 o'clock, we were treated to a regular hurricane, passing through town diagonally. The rear chimnies, parapets, fire walls, &c., of almost every store on the north of Main street, and the front work of those on the South side, are demolished. On the hill some 20 or 30 houses are laid low, others are unroofed, and with both gable ends blown out. In many instances whole sides are gone; trees are uptorn; steamboats driven from their moorings with loss of upper works. Our store is the centre tenement of a building of three stories, divided by high fire walls, and covered with lead. All this is swept off. Masses of lead, weighing at least 200 lbs., were stripped from it, and lodged on buildings over the way. By being on the spot we have avoided damage, although our roof is a complete riddle. Only one life, as yet, is known to be lost."

The Cholera in Cuba appears, according to accounts in the Journal of Commerce of Wednesday—evidently however, written under great excitement—to be still very fatal, having spread far and wide among the plantations, and carrying off the slaves by hundreds. In the cities it had disappeared, at least as an epidemic.

Mr. Webster arrived at Pittsburg on the evening of the 4th. The members of the bar of that city had a previous meeting, at which they resolved to wait in a body upon that distinguished American Statesman and Jurist.

The territory of Arkansas contains a population of about 41,000.

On the 1st July, between 4 and 5 P. M. in lat 32 1-2, long. 77, a bird known by the name of a Booby, flew on board the brig Evelina, arrived recently from New Orleans. It had attached to its neck a piece of leather containing the following words: "Cape Florida bearing W. S. W., distant 20 miles, I Booby took my departure from the ship Plato, Colligan, master, from New Orleans bound to Havre, 11 ds out, all well. Passengers, Dr. Rigaud, lady, 2 children and servant.—July 1st, 1833." On the reverse side was inscribed—"Mrs. Colligan is well and hearty."—Allowing the above to have been dated correctly the bird must have travelled nearly 400 miles in 8 or 9 hours.—[Cour. & Enq.]

New Havre Packet.—The ship launched on Saturday and intended as one of the second line of Havre packets, is named, in complement to the city, "*Utica.*" The Mayor and Council of that city having been invited to be present at the launch, were represented by a deputation consisting of Aldermen Mann, Miller, Hart and Griswold. These gentlemen were launched in the ship—Alderman Griswold doing the honors of the "christening."

In the afternoon the deputation met the owners at Niblo's Hotel, when Alderman Mann presented for the use of the ship, an elegant suit of colors, in remarking to Capt. Depeyster that,

"In the name and behalf of the citizens of Utica, permit us to present to you a suit of colors for the use of the splendid packet ship to which has been given the name of their city, and to tender to you and the owners their thatks for the compliment which has been paid them. The model of elegance of the Utica displays the great perfection of Naval Architecture, and her spacious accomodations and costly constructions evidence the liberal and enlarged spirit of enterprize for which the citizens of this commercial emporium have been long pre-eminently distinguished.

"Accept, sir, the best wishes of the body we represent, that the "Utica" may perform many prosperous voyages, and return laden with the wealth of foreign climes as a reward to her enterprising owners for the efforts they are making to advance the commercial prosperity of our country."

Captain Depeyster and the owners could not but be gratified by the attention that had been paid to them by so respectable a body—the more gratified that it was unexpected, and he replied to the address of Alderman Mann,—that

"The colors would, as the gift of the patriotic citizens of an enterprizing and flourishing city in the bosom of our great State, be ever regarded by him and by his crew, as incentives to zeal in their profession and badges of attachment to the Constitution and of fidelity to the Union. As the representative of the Corporation of the city of Utica, I tender to you and it my sincere thanks and that of the owners, for these emblems of commercial enterprize and of national honor, trusting that wherever the "Utica" may proudly bear them, they may trace a progress as prosperous as has been the onward march to wealth and to greatness of the city of her name.

After the presentation, the company partook of a dinner prepared in Mr. Niblo's best style, Ald'n Mann of Utica, presiding, and his honor the Mayor of this city acting as Vice President.

[*From the Boston Centinel of yesterday.*]

The Sea Serpent.—A party of 80 to 100 ladies and gentlemen embarked yesterday morning in the Steamer Connecticut, for the purpose of taking an excursion in the lower harbor, with the expectation of getting a view of His Serpentine Majesty. About 12 o'clock, when the steam boat was half way between Nahant and the Graves, the monster was seen approaching. A number of gentlemen took the small boat and made directly for it, but unfortunately did not run upon the animal as was intended, owing to a little mismanagement in rowing. The Serpent came within an oar's length of the boat, and without appearing at all alarmed or uneasy, took a slight curve towards the steamboat, passed under her stern within fifty or sixty feet, and then disappeared. We understand it was the opinion of those in the small boat that he might easily have been struck, but unfortunately there was no harpoon on board. At this time his motion was not undulating as has sometimes been stated, but rather like the movement of an eel or common water snake. It has been reported that there have been three or more of these strange creatures seen lately, one of which is supposed to be 150 feet long. The one seen yesterday, was from 60 to 70 feet in length. We would recommend some of our sporting friends who are skilled in the management of a whale boat, and use of the harpoon, to make an attempt upon the liberty of this marine monster, and there is but little doubt he might be taken.

The foregoing account is furnished by a gentleman who was one of the passengers, and had a good opportunity to see the serpent from the small boat, and whose certificate is annexed. This statement in its material bearings is also corroborated by several other gentlemen with whom we have conversed, who were on board the steamer. The excursion of yesterday, has afforded a much better opportunity of seeing this strange animal, than has occurred for years, and it is not inconsistent with the whole tenor of the statements that have been made at different times by great numbers of persons for the last fifteen years, since a monster of this description was first announced in our waters, it is admitted on all hands that the appearance of a marine animal of this description, would be still more extraordinary, if so many witnesses should be so grossly deceived, as would be the case, if no such animal had appeared. One or the other of these extraordinary difficulties is presented for the belief of the public, and we are of opinion that it would not require so great a stretch of credulity to believe in the existence of such an enormous Sea Serpent, as to believe that so many persons could be so greatly deceived. We learn that a gentleman fired at him with a musket from the Steamer, but without effect. The shot was given before he had approached so near the Steamer as he did a few minutes afterwards. The first thing that attracted the attention of those who were in the Steamer, was a peculiar appearance in the water at a distance, suposed to be occasioned by a shoal of small fish that he was apparently pursuing. Three distinct appearances of this kind were observed at the same time afar off, and the Steamer made for one of them, in pursuit of which the serpent appeared to be. It is therefore inferred by some of the passengers that there are three of the strange animals, as has been before stated.

We the undersigned, passengers on board the steamboat Connecticut, do hereby testify that we were in the small boat which put off from the steamboat, and approached within ten feet of a *Sea Monster*, which passed under our bow at a very rapid rate.—As near as we can judge from the view we had of him, his head resembled that of a pickerel. His head only appeared on the surface; as to the length of it, it is impossible to determine. The motion was not like that of the porpoise, but resembled that of a common snake.

Benj. H. Norton, Jas. W. Hale, Wm. Tewksbury, Jr. Sam'l. S. Williams, Geo. W. Proctor, *Passengers.*

Thomas Purcell, James Gahagan, *Oarsmen.*

Interesting to Whalemen.—The Daily Advertiser of Wednesday has a communication in relation to the new colony of Floriana, recently established on one of the Gallipagos Islands, on the Western coast of Peru, which contains interesting information for Whalemen in the Pacific Ocean. The Gallipagos are laid down on the equator, between 82 and 92 degrees West Longitude, about 200 miles from the coast of Peru.

"This Island, which is known in the chart by the name of Charles Island, has been given by the Government of the Ecuador, to a company composed of five persons, Messrs. Joseph Villasmil, Ignacio Hernandes, Juan Garces, Joaquin Villasmil, and Lorenzo Bark.

On the 21st of January 1832, Ignacio Hernandes, Joaquin Villasmill, and Lorenzo Bark, sailed for Guayaquil, to take possession of and deliver the Island to the Commissioners of the Company, Villasmill and Bark, Hernandes being fully authorized by Government to that effect. Bark remained on the Island with the first settlers. Since then, others have been sent, and by this time there are on the Island 70 married men, and about 200 persons in all. Small plantations, producing every vegetable needed by whalers, are getting up; and ere long they will find water and wood on the sea shore. With these great advantages, there is no doubt the Island will be the rendezvous of most of the whale ships in the Pacific, and must flourish rapidly.

The ships will be subject to no charges of any kind, and on the contrary every means will be employed to facilitate their views, and combine their interests with those of the inhabitants.

We have these particulars from respectable persons acquainted with Mr. Joseph Villasmil, of New Orleans, Director of the Enterprise, and Governor of the Island; and we have no belief that he will ever deviate from the line of conduct he has traced for himself; the only one which, he is perfectly aware, can insure the progress of the settlement, and his own personal reputation, so highly compromised in so delicate an enterprise. Mr. Villasmil is an American, who, though he has resided in a foreign country for many years, entertains the strongest affection for his own, (the United States,) and has gained, by great services rendered to the cause of Independence of South America, and a spotless conduct, that of the country where he resided. He is of a mild disposition, very polite without affectation, and there is no doubt that the settlement, under his patronage, will be a great resort for our whale ships. He is a man of middle age, understands different languages, and the necessary solid information to carry his project to a happy and honourable conclusion. Pecuniary compensations are beneath his sentiments; he aspires at others more flattering than gold, and will in all probability obtain them."

Delaware and Hudson Canal—The Kingston Sentinel states that the shipment of coal on the Hudson and Delaware canal is brisker than ever, and that 54 vessels departed from the Rondout, all loaded with coal during the week ending 22d ult. These vessels were chiefly from the Eastern ports. The whole number of boats which arrived at tide water, Eddyville, from the 15th to the 22d of June was 308, of which 226 were coal boats, with 6,341 tons of coal. Cleared during the same week, 260 boats.

The Honesdale Inquirer describes a new style of fishing, which was first tried during the late freshet. As a raft pitched over a dam across the Lackawaxen, below that borough, the forward end, as is usual, ploughed under water, and when it arose and the water drained off, about twenty-five suckers were seen flouncing on the timber, and were easily secured.

Clouds of *locusts* have lately made their appearance in Arkansas. In the forests, their course is marked, by the wilted and sallow leaves of the young and tender branches which have been perforated by them for the deposit of their eggs.

Insurance.—The Supreme Judicial Court in session in this city, on Wednesday last, decided in the case of William Eager vs. the Atlas Insurance Company, that in the adjustment of Insurance losses, the old materials, when any remain, should be deducted from the aggregate of loss, that is, before one third new for old is deducted, thereby confirming their decision in the case of Brooks vs. the Oriental Insurance Company in Essex, and conforming to the law and the practice which has for many years obtained in New-York.

The effect of this rule is to give the insured one third of the old materials, or in other words, not to deduct from so much as is found to be the value of the old materials applied to the repairs of the vessel one third as for new, as has been the operation of the practice.—[Boston Daily Adv.]

The Weavil.—The Ballston Spa Gazette mentions that the weavil has commenced his destructive operations on the wheat in that county—and that in some wheat fields of 60 acres, where there was every promise of an abundant yield—there will not be sufficient to pay the farmer for harvesting. It is said, that by sowing lime on the heads of wheat when the dew is on, will drive the weavil from the fields.

Distressing Case.—Saturday's report of the season 'down East,' is confirmed to-day by a letter from Thomastown, Me., in which the writer says:—"It has rained almost incessantly for six weeks. I am afraid we shall not raise *a single radish*,—that troubles me very much."—[Boston Mer. Journal.]

Quebec, June 28—A new instance of American enterprize and industry occured here this week. A Mr. Baird, of the State of Maine, who has a patent for bee-hives and who keeps a great number of bees, and of course *trades* in them, arrived in Quebec with hives, which he sold to the amount of between 2 and 300 dollars cash. He had brought some during the winter, in his boxes or hives, in a torpid state, and found a good sale; but it seemed more difficult to remove them in the summer season; their busy and active period. Mr. Baird, however, travelled during the night, and set his bees out during the day to feed and continue their work, which they did with their usual activity and regularity. He was about twelve nights on the journey, by the Kennebec road, and brought the whole of his hives to Quebec in good condition without loss.

Great Speed.—On Tuesday morning last, the steamboat Robert Morris made the trip from this city to New Castle in two hours and a quarter. The distance is forty miles. The same boat came hither yesterday from New Castle in the same time. This was done without any particular effort.—[Philadelphia paper.]

MISCELLANY.

The Hospice of St. Bernard.—Our readers will be interested, we are sure, in the communication published to day relative to an American benefaction to this ancient and solitary station—the discovery, by an American traveller, one of our fellow-citizens. of anthracite coal, in the vicinity of this monastery, and and the subsequent transmission, from home, of one of *Nott's Stoves*, in which to consume it, have been the means, it will be perceived, by the letters of the Senior Resident, Barras, of securing the blessing of abundant warmth to the pious brotherhood who pass their lives amid eternal snows, for the cause of pious humanity.

[Communicated for the New-York American.]

The Hospice of the Great St. Bernard is among the choicest spots of interest to the European traveller. The unpaid labors of the good monks and their co-workers, the noble dogs of the hospital, are familiar to all those who take pleasure in the records of deeds of benevolence. It is pleasing to learn by recent advices from that dreary region, that these pure hearted devotees, to whom humanity itself stands debtor, are likely to enjoy henceforth a little more of human comfort than they have heretofore done, and, what adds to our pleasure, that it will be through the instrumentality of our own fellow citizens. A few circumstances of their condition will make what we allude to better understood. This Hospice occupies, as is well known, the most elevated practicable pass of "the High Alps," where, at an elevation of 8000 feet from the level of the sea, has been constructed amid precipices of rock and ice, a rough bridle pass for the convenience of travellers, connecting the Pays de Vaud with Savoy and the neighboring parts of Italy. In this gorge stands the Hospice of St. Bernard, on the edge of a frozen lake, the highest inhabited spot in Europe, and a great deal too high, as all visiters will testify, for human endurance—unless supported as these good fathers are, and have been for these six hundred years, by the united enthusiasm of religion and benevolence. To give warmth to this frozen mansion, situate amid eternal ice and snow, and in a temperature which often falls to the zero of Fahrenheit even in summer, would seem to be "a sine qua non" of residence in it, and yet, from the expence of fuel, is utterly beyond the scanty and precarious means of the establishment,—all the fuel hitherto consumed by them, consisting of small faggots of wood, brought up on the backs of mules, over a broken, rocky ascent of 25 miles from the valley below. The result has been, that the whole supply of their fuel, beyond what was needed for cooking, has been reserved to warm their shivering or frozen guests, in the "travellers' rooms," while they themselves have been content to pass their lives in a freezing temperature within doors as well as without, between naked stone walls, on bare stone floors, without curtains, carpets or fire. Such have been their comforts. It is pleasing now to contemplate a warmer picture.

In the summer of 1830 a traveller from our city, during a short abode at the Hospice, whose friendly walls received him and his family just in time to save them from one of their perilous snow storms, had the good fortune to light on the discovery that among the mineral products of the adjoining height was an anthracite coal, though of very inferior quality. Having no means of burning such an incombustible fuel, this discovery led to immediate directions for the erection of a grate for that purpose, but, as it proved, with partial success; and subsequently, on his return, to the remitting to them better plans and models, and eventually, through the liberality of a few to whom the story was told, to the transportation to the Hospice itself of one of Dr. Nott's admirable stoves of a large size, with all things appertaining to its immediate use. The following extracts of letters from the Hospice relate to the progress of the experiment, and conclude with the most satisfactory statement of its complete success, and that "the joy of the brethren knows no boundary."

St. Bernard, July 19, 1831.

Dear Sir:—I often think of your short visit to our abode, and of the good instructions you gave us on the method of burning Anthracite. We continue the experiments, and we intend to put up grates soon.

Barras, Chan. Reg.

St. Bernard, 5th September, 1831.

Sir:—I scarcely know how to thank you, dear Sir, for the kind and obliging letter with which you have honored us, accompanied by valuable descriptions and models of grates, that will be of the greatest use to us: I beg you to accept our sincere thanks for them. According to the instructions you gave us a year ago, I had a grate put up in the parlour chimney; it has succeeded well; there are, however, still some improvements to be made after your model, and, thanks to you, we hope to succeed in it entirely.

A few days after your departure from our Hospice a year ago, I was in great danger of being lost in a tempest on our mountain. Three persons perished at a short distance from me. God was graciously pleased to prolong my days; I ought to be very grateful to Him, and endeavor to live for His service.

Your very obedient servant,

Barras, Chan. Reg.

St. Bernard, February 20th, 1833.

Much Honored Sir:—The Hospice of St. Bernard will always preserve a lively remembrance of the interest which you take in its prosperity. I assure you, and I beg you also to assure your friends, that there is no member of our congregation, who is not very grateful for the benefits which our Hospice has received, and is yet to receive, by your generous offer of a furnace to burn Anthracite: it will be very valuable to us, by enabling us to warm the house economically, and will be a great relief to suffering beings, for the distance of five leagues (25 miles) from the woods, their scarcity, and the difficulty of transportation, obliged us to practice the strictest economy. The Anthracite, as you know, is so near, that it can be transported without expense—but we were in want of the means of making it burn. This furnace, then, will be a monument which will perpetuate the generosity and the devotion of our friends in America, to the poor travellers across the "High Alps," by the great St. Bernard. Gratitude will owe these benefits to that pious sentiment, which so deeply interests the friends of humanity in the unfortunate.

Your humble servant, Barras, Chan. Reg.

St. Bernard, April 26, 1833.

Sir:—The experiment made by Mr. Saynisch, on the burning of the Anthracite in the furnace that you had the kindness to send to us, was crowned with the most complete success. We have now only to thank you, and beg you to be the interpreter of our sentiments of deep gratitude, to the generous benefactors who have united with you in kindness to us.

Your very humble servant,

Barras, Chan. Reg.

The following is an extract from the gentleman above alluded to, a scientific traveller and friend, who was fortunately at the Hospice on its arrival.

Hospice St. Bernard, 26*th April*, 1833.

My dear sir—It is with the greatest gratification and pleasure that I can communicate to you the fulfilment of your wishes to erect the stove which you had the kindness to send to the St. Bernard. In this time of the year, when the snow reaches Lydde, 4 miles below St. Pierre, it was with the utmost difficulty for me to bring it up. Till Lydde, it was brought on wagon; from there I took six men, who brought it in pieces to the summit. The construction was very difficult, because several pieces were broken when I opened the case. * * * Notwithstanding all this I succeeded to burn the coal, which is more a plumbago than anthracite. Since yesterday the stove is in full operation, and the joy of the brethren has no boundary. They remember you and your dear family with the greatest gratitude. To-morrow I shall go down with the Maronier and the dogs, because the weather is very stormy, and the snow enormous. Your most obedient servant,

* * * * L. SAYNISCH.

P. S. I hope you will excuse my good English, my Dictionary is 6000 feet below.

Account, rendered to those concerned, of money received and expended.

Cr.		Dr.	
Ed. Laight, Esq.	$10	Bill of stove,	$25
W. Moore,	10	Remitted to Martigney, to pay the expense of getting up mountain,	10
Fred. Prime,	10	Transport from Havre to Martigney, per bill, De la Roche, &c.	23
Miss Douglass,	10		
J. McVickar, (balance)	18		
	$58		$58

The thanks of the Monks of the Hospice are hereby presented to the above named gentlemen, and also to Messrs Nott & Co. who liberally put their stove at cost price; Messrs Bolton, Fox, & Livingston, in whose vessel it went freight free to Havre; and to Messrs. DeRham, Iselin & Moore, who kindly undertook the charge of its safe remission to Martigney.

[*From the New Monthly Magazine.*]

THE DEATH OF HOFER.

"*Florence, Jan.* 20.

"DEAR LADY ——:

"Do not you already begin to repent that you commanded me to write to you on my return to Italy? I passed two entire months in Germany, and like the people. Of the country you know as much as I do—people who paid more attention to it have described it better than I could. In passing I saw Waterloo—an ugly game, played badly both by loser and winner. At Innspruck I entered the church in which Andreas Hofer is buried. He lies under a plain slab, on the left, near the door. I admired the magnificent tomb of bronze, in the centre, surrounded by heroes, real and imaginary. They did not fight tens against thousands—they did not fight for wives and children, but for lands and plunder—therefore they are heroes!! My admiration of these works of art was soon satisfied,—which, perhaps, it would not have been in any other place. Snow, mixed with rain, was falling, and was blown by the wind upon the tomb of Hofer. I thought how often he had taken advantage of such weather for his attacks against the enemies of his country, and I seemed to hear his whistle in the wind. At the little village of Landro—(I feel a whimsical satisfaction in the likeness of the name to mine)—the innkeeper was the friend of this truly great man—the only great man that Europe has produced in our days, excepting his true compeer Kosciusko. By the order of Bonaparte, the companions of Hofer, eighty in number, were chained, thumbscrewed, and taken out of prison in couples, to see him shot. He had about him one thousand florins, in paper currency, which he delivered to his confessor, requesting him to divide it impartially among his unfortunate countrymen. The confessor, an Italian, who spoke German, kept it, and never gave relief from it to any of them,—most of whom were suffering, not only from privation of wholesome air, to which, among other privations, they never had been accustomed, but also from scantiness of nourishment and clothing. Even in Mantua, where, as in the rest of Italy, sympathy is both weak and silent, the lowest of the people were indignant at the sight of so brave a defender of his country led into the public square to expiate a crime unheard of for many centuries in their nation. When they saw him walk forth, with unaltered countenance and firm step before them—when, stooping on the ground which was about to receive his blood, they heard him, with unfaltering voice, commend his soul and his country to the Creator,—and, as if still under his own roof, a custom with him after the evening prayer, implore a blessing for his boys and little daughter, and for the mother who had reared them up carefully and tenderly thus far through the perils of childhood,—finally, when in a lower tone, but earnestly and emphatically, he besought pardon from the Fount of Mercy for her brother, his betrayer,—many smote their breasts aloud; many, thinking that sorrow was shameful, lowered their heads and wept; many, knowing that it was dangerous, yet wept too. The people remained upon the spot an unusual time; and the French, fearing some commotion, pretended to have received an order from Bonaparte for the mitigation of the sentence, and publicly announced it. Among his many falsehoods, any one of which would have excluded him forever from the society of men of honor, this is perhaps the basest; as, indeed, of all his atrocities, the death of Hofer, which he had ordered long before, and appointed the time and circumstances, is, of all his actions, that which the brave and virtuous will reprobate the most severely. He was urged by no necessity—he was prompted by no policy: his impatience of courage in an enemy, his hatred of patriotism and integrity in all, of which he had no idea himself, and saw no image in those about him, outstripped his blind passion for fame, and left him nothing but power and celebrity.

Believe me, dear Lady ——, your very obliged and obedient servant, WALTER S. LANDOR.

[*From the Cherokee Phoenix.*]

Murder of Christian Indians on the Muskingum.—A little more than half a century ago, there was at Gnadenhutten, on the Muskingum, a settlement of Christian Moravian Indians, who took no part in the prevailing wars, and were so peaceable they

> "Lived unknown
> 'Till persecution dragged them into fame
> And chased them up to heaven."

Many persons who adopted the sentiments long before advanced in a sermon, by a worthy clergyman of Boston, that the Indians were Canaanites and should be completely exterminated, were indignant because the Governor of Pittsburgh had released several friendly Indians that had been unjustly imprisoned. One hundred and sixty met at Wheeling and Buffalo and proceeded to Gnadenhutten with more than the malice of Satan when he entered Eden. Upon their arrival they professed much sympathy and friendship for the unsuspecting Indians whom they said, they had come to escort to Pittsburgh where they should be protected from their enemies. They possessed themselves of their guns and hatchets, which they promised to return at Pittsburgh. In this the brethren acquiesced and thought they saw in it the protecting hand of God.

A number of the strangers expressing a desire to see Salem another christian settlement, they were accompanied by some of the brethren. There also, they professed much friendship and easily prevailed upon the Indians to return with them. On the way they entered into much spiritual conversation, for they pretended to be very religious. Suddenly they were seized, bound, and deprived of even their pocket knives, and when they arrived at Gnadenhutten, they found brethren there in the same condition. The murderers then held a council to determinate how they should put them to death. Some wished to burn them alive, but it was resolved to scalp them; and a messenger was sent to tell them that as they were christian Indians they might prepare themselves in a christian manner, for they must all die the very next day. In vain they appealed to God for their innocency. It was enough that they were Indians. Their doom was irrevocably fixed. Neither bloodless hands—nor sincere hearts—nor father's entreaty, nor mother's tears, nor the inoffensiveness of infancy moved the hearts of those determined to do the work of death.

The last night these pious natives spent on earth, was employed in praying, and encouraging each other to remain faithful unto the end; and in confessions, and expressions of forgiveness and love.

When the morning arrived the murderers expressed great impatience to commence the work of carnage. The brethern declared they "were ready to die, having commended their immortal souls to God who had given them divine assurance in their hearts that they should be with him forever."

Immediately after this the defenceless victims were bound two and two together with ropes, and led into two houses which their murderers had prepared and denominated slaughter houses, and there scalped and pierced with swords so that the blood flowed in streams into the cellars. Thus sixty-two adults, and thirty-four children were butchered, in cold blood. Only two escaped, one having been scalped lay among the corpses as dead, till the murderers retired, the other being concealed in the cellar of one of the slaughter houses.

How often do parents fill the minds of their children with recital of murders committed by Indians, thus creating toward that unfortunate and much injured people an aversion as lasting as life. Let such think of Muskingum and be silent. While we tell of their cruelties, they can tell more deeds of one that much better befit a Turk than those who profess to have "drunk the sigh of Calvary."

Great Skill in Musketry.—We were conversing with an acquaintance from the back woods, some time since, who appeared to be much elated with his exploits as a sportsman. After listening patiently to several stories of considerable magnitude, which he related with some goût, we inquired whether he ever happened to shoot a wild turkey? "Why not ezackly," said Jonathan, very gravely, "not ezackly: but father and I *felled a tree across the track of one only week afore last!*"

POETRY.

A VOICE FROM MOUNT AUBURN—THE NEW CEMETERY NEAR BOSTON.

BY MISS GOULD.

A voice from Mount Auburn! a voice!—and it said:
"Ye have chosen me out as a home for your dead;
From the bustle of life to have rendered me free;
My earth ye have hallowed—henceforth I shall be
A garden of graves, where your loved ones shall rest;
O, who will be the first to repose on my breast?

"I now must be peopled from life's busy sphere;
Ye may roam, but the end of your journey is here.
I shall call! I shall call! and the many will come
From the heart of your crowds to so peaceful a home.
The great and the good, and the young and the old,
In death's dreamless slumbers, my mansions will hold.

"To me shall the child his loved parent resign;
And, mother, the babe at thy breast must be mine!
The brother and sister for me are to part,
And the lover to break from each tie of the heart.
I shall rival the bridegroom, and take from his side,
To sleep in my bosom, his beautiful bride.

"And sweetly secure from all pain they shall lie
Where the dews gently fall, and the streams ripple by,
While the birds sing their hymns amid air-harps that sound
Thro' the boughs of the forest trees whispering around,
And flowers bright as Eden's at morning shall spread,
And, at eve, drop their leaves o'er the slumberer's bed.

"But this is all earthly! while thus ye enclose
A spot where your ashes in peace may repose—
Where the living may come and commune with the dead,
With God and his soul, and with reverence tread
On the sod, which he soon may be sleeping below:
Have ye chosen the home where your spirit shall go?

"Shall it dwell where the gardens of Paradise bloom,
And flowers are not opening to die on the tomb?
With the song of an angel, a vesture of light,
Shall it rise in a world free from shadow and blight:
Where the waters are pure, from a fount never sealed,
And the secrets of heaven are in glory revealed?

"A day hastens on—and an arm then shall break
The bars of the tomb—the dread trump shall awake
The dead from their sleep in the earth and the sea,
And, 'render up thine!' shall the sound be to me!
Prepare for that hour, that my people may stand
Unawed by the scene at the Judge's right hand."

> In Rome's best days, imperial pride
> To a palm tree the serpent tied,
> And falsely on a medal stamp'd it,
> "*Nemo antea religavit.*"—[Augustus.]

Editor of the New-York American:

Sir:—Not hearing from the Sea Serpent lately, I have taken the liberty to send you a rough Peter Pindaric dialogue, between a worthy son of "*Down* East" and that monstrous monster.

Scene—a sea-coast.

Jonathan. Hail mighty monster of the deep,
Described by Job, though not of late,
Come near, O! let me have a peep,
And then go back, thy voyage relate.

Sea Serp't. Your invitation is quite kind,
Relations quick their likeness find,
So we are call'd a slippery race,
And Ocean is our feeding place.

Jonathan. Now *jot me if I hurt your skin*,
Your form and length I wish to know,
And when that's done, off you may swim,
Leviathan's great strength to show.

Sea Serp't. We both were born on fish to feed,
Of my great skin you have no need;
Perhaps you might this hide strip off,
And boil my blubber on the wharf.

Jonathan. I'll swear by all my wooden bowls,
By all my onions, all my cheese,
By all the *cod* that swim these shoals,
My only object is to please.

Sea Serp't. Jonathan! your quick invention,
Can, without the least contention,
Make a likeness quite as easy,
For the Museum, and to please ye.

D. F. Z.

MARRIAGES.

On Friday, 28th ul imo. by the Rev. Dr. Pelton, Mr. John Joseph Lamontagne Charruaud, to Miss Matilda L., daughter of Capt. Joshua Geer, all of this city.

On Saturday evening, at St. Clement's Church, by the Rev. L. P. Bayard, George F. E. youngest son of the late Gen. Gabriel Johnston, of England, to Cecilia Helene, youngest daughter of the late T. B. Durand, Merchant of this city.

On Wednesday evening, 3d instant, by the Rev. Dr. M'Elroy, William Codman, to Martha Ann, daughter of the late W. B. Gilley.

On Wednesday evening, 3d July, at Burlington, N. J. by the Right Rev. Bishop Doane, Mr. Joseph Croskey, to Miss Maria Teresa, daughter of the late John William Macomb, Esq.

On Wednesday evening, July 3, by the Rev. Mr. Hughes, at St. John's Church, Philadelphia, Joseph R. Chandler, Esq., Editor of the U. States Gazette, to Mrs. Maria H., daughter of Benjamin Jones, all of that city.

DEATHS.

On Tuesday, 2d instant, Washington, infant son of Thomas and Maria Bloomer.

In this city, 6th instant, Emma Fields, infant daughter of Mr. Charles Porter.

Saturday morning, 6th instant, of a lingering illness, Mr. William Gamble, in the 47th year of his age.

On the 5th instant, of consumption, Christopher Humme, in the 72d year of his age.

This morning, Mrs. Astor, widow of Henry Astor, deceased, in the 76th year of her age.

Miss Elizabeth Adams.

On Tuesday afternoon, Mr. Richard Collir, in the 49th year of his age.

On Tuesday evening, Alexander Diver, aged about 43, after a short but severe illness.

Last evening, after a lingering illness, Thomas Waring Steele, aged 29 years.

Suddenly, at Mobile, on the 26th June, Henry A. Ellis, a native of this city, and son of John F. Ellis, Esq aged 32 years. His death was occasioned by a fall from his horse

On board the U. S. ship Vandalia, at sea, Albert Krustner, Esq. in the 29th year of his age. This gentleman was a native of Leipsic, Saxony, where his relations reside, and had been established several years in the City of Mexico as a merchant, of the firm of Duport, Krustner & Co.

At Flushing, Long Island, on the afternoon of second day, 8th inst. Phebe S., aged 23 years, wife of Wm. L. Jenkins, and daughter of Jos. S. Shotwell.

In Surry, N. H., on Tuesday, 2d instant, widow Patience Field, consort of Deacon Moses D. Field, aged 85 years.

G. LANSING, *Engraver on Wood,*

35 WALL STREET.

☞ All kinds of Machinery correctly drawn, and neatly engraved. M4

TO DIRECTORS OF RAILWAY COMPANIES AND OTHER WORKS.

☞ An Engineer lately from England, where he has been employed in the location and execution of the principal railways in that country, wishes to engage with some company in the United States.

From his practical knowledge of the various kinds of motive power, both of stationary and locomotive engines, also the construction of railway carriages of many descriptions, he has no doubt that he would prove of efficient service to any company having works now in progress.

Letters addressed to W. K. G. 35 Wall street, or to the care of Wm. & F. Jacques, 90 South street, will be punctually attended to. Most satisfactory reference can be given. m11 tf

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1¼ do. ⅜ do.
800 do. 2 do. ½ do.
800 do. 2¼ do. ⅝ do.
soon expected.

Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. J6 6m eowr

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

☞ **GRACIE, PRIME & CO.,** offer for sale, at 22 Broad street—

2 cases Gum Arabic
20 do. Danish Smalts, EFFF
10 do. Saxon do. do.
100 bags Saltpetre } Reduced Duty
2 do. Gall Nuts; 20 tons Old Lead
100 do. Trieste Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do. Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
6 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
30 do. Molieres Almonds
143 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
15 do. 6-8 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
4 do. White Quiltings
10 do. Borrie's Patent Thread, No. 22 and 25
10 do. Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
26 bales low priced plain Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35, 24½x36, 21x34½, 26x36, 26x37, 29x41, 27x39½, 21x38, 24x29, 24x23, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.

5 cases each 1600 Sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
3 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do do do Red do Gold do
2 do do do White do Silver do. A20

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Rail road, I cheerfully furnish thee with the following information: the whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norriet. Railroad

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m13

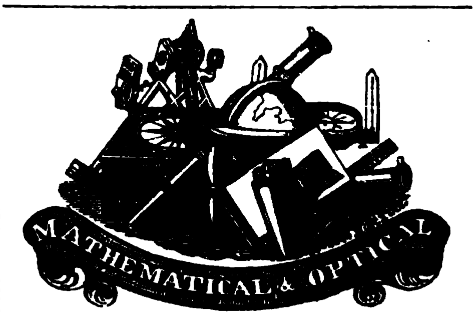
☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope,* having removed their establishment to Hudson, under the name of *Durfee & May,* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York,
January 29, 1833. F31 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

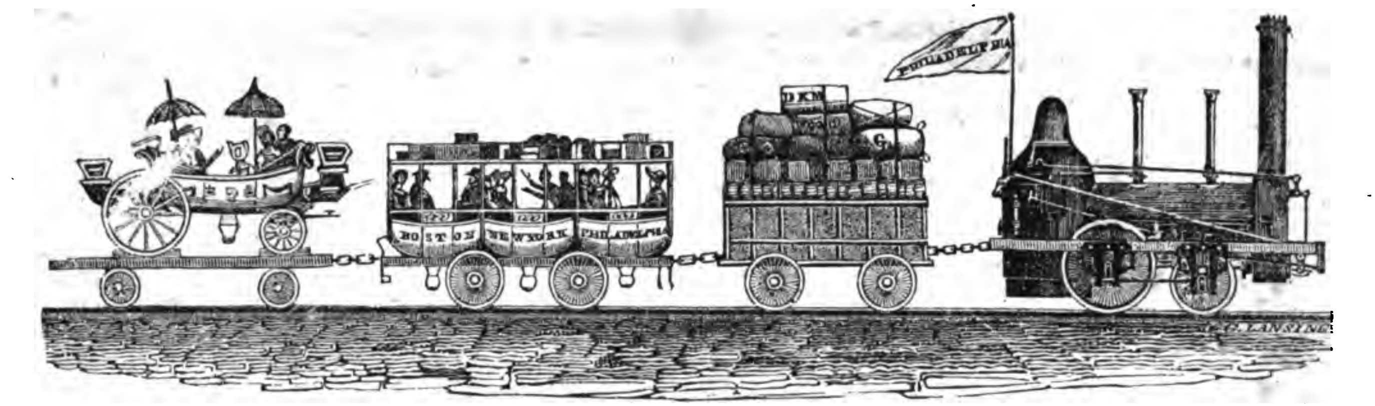
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m35



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, JULY 20, 1833. [VOLUME II.—No. 29.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JULY 20, 1833.

ERRATUM.—In the communication of R. BULKLEY, published in the last number of the Railroad Journal, page 434, in the 11th line from the bottom of the second column, for "between 22 and 32 degrees," read "between 212 and 32 degrees."

We are indebted to JOHN B. JERVIS, Esq. late Engineer of the Mohawk and Hudson, and of the Schenectady and Saratoga Railroads, for a description, with drawings, of his Railroad Waggon Wheel, which, we have no doubt, will be found highly valuable to Railroad Companies. The trifling addition of material and weight would seem by no means in comparison with the beneficial results from its use.

MECHANICS' MAGAZINE.—The June number of the *Mechanics' Magazine* will be ready for delivery on the 22d. This number has been delayed several days beyond its usual ime of appearance, but in every other respect it is superior to the numbers which have preceded it. It contains eighty pages of letter-press, including a preface and copious index of the volume, with engravings, among which is a very good likeness, accompanied by an interesting memoir of the late ELI WHITNEY, Esq. the inventor of the *Cotton Gin*,—the greatest *labor-saving* machine, perhaps, with the exception of the steamengine, that was ever invented by man. The other engravings are mostly illustrations of new and useful inventions. This, the sixth number, completes the first volume of the *Mechanics' Magazine, and Register of Inventions and Improvements*: a work, it is admitted by competent judges, of much merit and utility, which was undertaken by the editor of this Journal, a few months since, without a single subscriber. Twelve hundred copies were printed of the two first numbers, and so great has been the call for it, that the entire edition, with the exception of about one hundred copies, of those two numbers, is disposed of; so encouraging indeed has been the reception of, and so great the demand for, the work, that the three last have been, and the future numbers will be, *stereotyped*, and the *first* numbers will be reprinted and stereotyped in a short time, so that any demand which may be made for the work can be promptly supplied.

We were not prompted to this enterprize so much by a prospect of immediate success, as by a knowledge of the want of such a publication, as a medium through which the numerous new inventions and improvements of the day might come before the public in such a shape as to be fairly understood, and a reliance upon the good sense and patronage of those for whose use the work is designed. Thus far, at least, we have not been disappointed; and for the future we can only say, that our best efforts shall be made to render the MECHANICS' MAGAZINE all that we have promised, and all that may *reasonably* be expected at a price so low.

The terms are $3 per annum in advance, for twelve monthly numbers of 64 pages each; and if any of our friends can aid us in its circulation they will do us a favor, equal; even, to that of circulating the Railroad Journal—the omission to do which, no friend of ours, or of Internal Improvements, will be guilty of.

The *memoir* of Mr. Whitney has been transferred to the columns of this Journal, and it will richly repay those for reading it who require an occasional reference to such a specimen of noble perseverance, to induce them to press forward to the attainment of eminence and high respectability. One of the most excellent traits in the character of Mr. Whitney was his perseverance—a fixed purpose to accomplish whatever he undertook. The ungenerous course pursued towards him by those States which were so immensely benefitted by his invention, did not dishearten, although it well nigh ruined him. He, unlike most other men of great mechanical powers, directed his efforts to a single object until it was attained. He may well be taken as a model by the thousands of young men who are left to be architects of their own fame.

At a meeting of the Stockholders of the Brooklyn and Jamaica Railroad Company, held in Brooklyn, the following gentlemen were chosen Directors:—

Eliphalet Weekes,	Robert Schuyler,
John A. King,	Elihu Townsend,
Nathan Shelton,	Samuel Smith,
James Herriman,	Abner Chichester,
James Foster,	Van Wyck Weekes,
Charles Hoyt,	Joseph W. Allen.
Charles F. Moulton,	

At a subsequent meeting of the Directors, held at Jones's Buildings, New York, ***Eliphalet Weekes*** was elected President, ***Robert Schuyler*** Secretary, and ***Elihu Townsend*** Treasurer.

We learn that the boiler of the steam engine of the Dry Dock Company burst yesterday morning. Two persons were scalded, and the engineer was thrown out of doors, but was only slightly injured. This explosion is said to have been caused by the gradual dropping of water for a length of time from the tank above, on to that part of the boiler which gave way, and which was thereby corroded and weakened.—[Mercantile & Adv.]

Accident.—A workman on the Providence Railroad while in the act of charging a rock with a blast on Wednesday was blown—not sky high—but about thirty feet above *terra firma*, from which elevation he descended without serious injury.—[Bost. Atlas.]

STEAM BOILER DEPOSITS.—*Institution of Civil Engineers, April* 3.—In the case of the saline deposition, which accumulates in boilers during sea-voyages, it was mentioned as the usual practice merely to blow off a portion of water from the boiler, according as it becomes saturated. In short voyages of three or four days, this is found sufficient for the purpose; but for vessels crossing the Atlantic, or on other long voyages, a more efficient plan has been resorted to, by attaching an apparatus to the engine which pumps out brine from the bottom of the boiler, at the same time throwing in a quantity of clear water equal to what is abstracted. The degree of saturation is indicated by means of an attached thermometer: 218 degrees Fahr. being the boiling point of clean sea water in a steam engine boiler, a range is allowed from that to 227 degrees, which marks the limit of saturation admissible for a steam boiler to be worked with safety.—[Ath.]

A New Invention in Road-making, with the Use of Timber. By John Hartman.

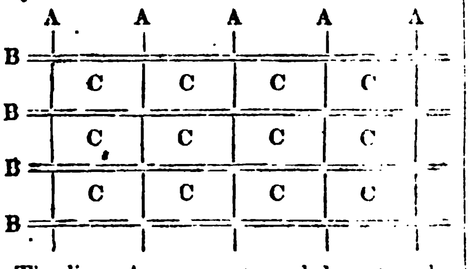
To the Editor of the American Railroad Journal.

Scottsville, Albemarle Co., Va. July 4, 1833.

Dear Sir,—Not having the pleasure of a personal acquaintaince, but being assured by the Editor of the Virginia Farmer, that you will take pleasure in noticing an invention in road-making with the use of timber, which, thus far, is considered as very valuable, I take the liberty of asking your attention to it.

The plan is one which is capable of demonstration, and will be found valuable in timbered countries, particularly where stone is not plenty; and where it is, and timber is equally so, and interest is allowed on the difference of cost, I have no hesitation in saying, that the use of timber will be preferable, either for flat or hilly countries.

I will give you a rough diagram and description, and then say a word more upon the subject.



The lines A represent good locust, cedar, oak, or other timber, of 10 or 12 inches diameter, of lengths to suit the road, laid across it, say 8 or 10 feet apart, rough, for the rails B to lie on, which should be good lasting timber, of from 15 to 20 inches diameter, sawed through the centre, with the edges hewed off, leaving a surface of from 10 to 15 inches, (further experiment must prove which is best, a wide or narrow rail,) bedded, and pinned or bolted down upon the sills A, and, upon the out edge of each, spike on scantling, say three inches square, as guides for the wheels, or upon each edge of the rails or timbers B, forming a groove for the wheels. I however consider the first plan best; then fill up the spaces C level with, or rather above, the rails B, for the horses; the wheels, of course, to run upon the rails B. When two tracks are put down, the space between them must also be filled level, so as to admit waggons, stages, carriages, &c. to pass from one track to the other, when necessary, as no impediment will present itself but the scantling, and that only on one side, which would amount to nothing, nor would the occasional crossing of this scantling injure it, as it would rarely or ever occur twice in the same place.

You see it is quite a simple plan. I will mention some of the advantages it offers for a new road, over M'Adamized, and particularly on hill sides. In the construction of a new road there is no necessity for grubbing, low cutting is quite sufficient. These timbers are put down in the surface of the ground; then, by cutting a ditch on each side of the road, to obtain earth enough to fill up the horse path or way, between the rails, which should be well rammed, or packed down, by a machine just invented for that purpose.

The elevation given, and the fact that it must be kept in shape, or together, by the timbers, which, with the side drains, will guarantee a good road, even in a marsh, for it is a known fact that it is the wheels of carriages and waggons, and not the horses' feet, which are so destructive to roads, by following always the same track, hence the collecting of water in them, and mud-holes. On hill sides the plan will be admirable, requiring the hills only to be levelled, either by large rough stones, where they are found plenty, as they frequently are on mountains, or timber may be substituted on the lower side, with a little digging on the other. You have the frame level; the earth then taken out on the upper side of the rail, to carry the water off, will fill up the track for the horses, which gives a perfectly smooth road, with less labor and expense generally than would be necessary for a single track of common turnpike, and no fear of its cutting up or wasting away by every rain. The side rails you see will effectually prevent the water from washing the road; and you see the facilities this plan gives for crossing gullies, forming culverts, &c. A double track can be put down, depending upon the convenience and cost of timber, and filled with earth for from 8 to $1200 a mile, which is but little above the average cost of shaping or throwing up a road of earth alone, 20 feet wide. Bear in mind, too, that 15 feet is wide enough for this plan, whilst, to M'Adamize, it must be, for a double track, from 30 to 40, which forms a heavy item of the expense, and the delay in M'Adamizing should not be forgotten, for the earth must settle before the stone is put on it.

I wish you to give this an insertion in the Railroad Journal, with such remarks as you may think proper. I ask, however, to reply to any objections that may be started. We know, from experience, that the timbers will not *wear* out, and that they *must last* as long as in *railroads*. The design is for common waggons and carriages.

There is no doubt but it will be immediately tried upon a turnpike, connecting the James River at this place with Staunton in the Valley, a distance of 44 miles, instead of M'Adamizing. I have found in the last two weeks, in a journey to Washington City and Baltimore, that, without an exception, and amongst the number several of the most intelligent and practical men found there, including several superintendants of graduation and construction of the Baltimore and Ohio Railroad, and Cumberland roads, being practical engineers, and not an individual but had the very best opinion of it, or feared its not being very valuable for collateral roads. I have no doubt that it will prove a great acquisition to the internal improvement of our country, and give great facility for the speedy transportation of the mails in winter.

I have secured a patent right for the use of it, which I will dispose of to companies or individuals upon good terms.

It is thought generally that timbers will last better to have them burnt or charred, instead of taking the bark off.

Yours, most repectfully,

John Hartman.

The Trial Chronometers at the Royal Observatory. [From the London Nautical Magazine.]

One of the first objects of peace in all civilized countries is the advancement of the arts and sciences; and of the numerous acquisitions which they have made in England during the last few years, the perfection of the chronometer is not the least important.

The consequence and value of this machine to a country so "essentially maritime" as Great Britain, has justly obtained it the attention and patronage of Government; and for the last ten years its improvement has become the object of national reward. In fact, the sum of £500 has been annually expended with this design, in the purchase of the best chronometers that the country can produce. Previous to the year 1823 that sum had been divided into £300 and £200, for the purchase of the two best chronometers; but since that time it has been distributed among the three best, in the proportion of £200, £170, and £130, according to their respective qualities. We shall see that this measure has been attended with salutary effect, for, while it has encouraged the art of constructing the chronometer, it has secured the best of them for the use of the Royal Navy. It has also excited an honorable competition, which has been the means of bringing them to their present perfect condition: one which, until some fresh discovery takes place in their construction, does not seem likely to be surpassed. Another good effect has attended this measure on the part of government. Until the establishment of trial chronometers at the Royal Observatory, the public had no criterion to guide them in deciding on their merits, and consequently their proportional value. Until the absolute daily rates were published in their regular monthly forms, as they are found by comparison at the Observatory, the dark ages of the chronometer may be said to have prevailed: for a veil of darkness hung over the performance of this invaluable machine, and all was uncertainty and conjecture respecting it. The fame of a solitary one now and then broke through this spell, and we heard of its making the land to a mile; but this was considered a *rara avis*, and the owner of it fortunate in his possession. Even Government knew nothing about it, for it was not satisfactorily established what constituted a good chronometer. But, by the rigid trial which they undergo, the good were soon distinguished from the bad, and the state of the art in this country was quickly ascertained.

In 1822 the system of the trial chronometers at the Royal Observatory was established, and in order to ascertain the condition of the art, a reward of £300 and £200 was offered by the legislature for the two best chronometers. Notice was published, that any chronometers might be sent to the Royal Observatory, on trial, for the reward, provided that they were the property of the depositor, and that he was a chronometer maker by profession. As might be expected, chronometers rushed in from every quarter; for, on referring to the printed monthly reports of the Observatory, we find no less than thirty-one were deposited; and it is to be presumed, that those who sent them were their makers, whose names they severally bore.

The result of the first trial was, that, according to the method of deciding on their qualities, the trial number of one, Barraud's, No. 957, was 11,29 seconds, while that of Pennington, 155, was 12,57 seconds: results very different from those of the present day, but sufficient to show the condition of the art.

We will here take the opportunity of showing the method by which the merits of a chronometer are decided by what is termed its trial number: a method which we believe was proposed by the late Dr. Young, being the result of an extensive mathematical reasoning.

The trial number is derived from the following formula; and the superiority assigned, accordingly, to the smallness of this number.

Put R=the greatest *mean monthly* rate, per diem.
r=the least do. do.
R′=the greatest daily rate in each month.
r'=the least do. do.
n=No. of months trial.

Make $(R'-r')=z$

And put z, z', z'', z''', &c., for each successive month. The Trial No. then is

$$2(R-r)+\frac{1}{n}\times(z, z', z'', z''',)\ \&c.$$

$$=2(R-r)+\frac{\Sigma\,(R'-r')}{n}$$ where Σ denotes the successive sums of z, z', z'' &c.

That is, by taking the difference of the greater and lesser mean monthly rate, and multiplying the same by 2, and adding thereto the mean of the monthly extreme variations.

EXAMPLE.

	Mean Rate	Extreme Variation.
1830, October	—0s,59	0s,9
November	—0,54	2,1
December	—0,85	2,0
1831, January	—0,57	1,8
February	—0,58	1,1
March	—0,51	1,1
April	—0,31	1,2
May	—0,75	2,0
June	—0,95	1,3
July	—1,01	1,9
August	—0,82	1,4
September	—0,50	1,5
Mean		1,53

Greater rate in July	1s,01
Lesser do. in April	0, 31
Difference	0, 70
Difference × 2	1, 40
Mean of Extreme Variation	1, 53
Trial Number	2, 93

Thus instituted, the annual trials proceeded regularly at the Observatory; and at the commencement of the 6th trial, in July, 1827, a notice was given, that "No chronometer is to be entitled to the first premium if the trial number shall exceed six seconds, nor to the second if the trial number shall exceed ten seconds. This at once shows that it had been tolerably well ascertained what were the limits to be allowed to a good chronometer. We have seen that 11s,29 and 12s,87 had been the trial numbers of the two first best chronometers, and we now find it determined that six seconds was to be the trial number for the first prize; and that unless the second chronometer came within ten seconds, it was not to be entitled to a premium: both of which limits were within those of the best at the commencement.

In the trial of 1828, the distribution of the whole sum of £500, into three portions, took place in the manner we have before observed, and the trial numbers were respectively established as follows:

For the 1st premium of £200, not exceeding 5 seconds—2d, £170, not exceeding 6 seconds—3d, £130, not exceeding 7½; showing a reduction of one second in the trial number for the first premium—of four seconds in that for the second—and for the third, a number two and a half seconds less than that which had been first established for the second.

In November, 1831, at the commencement of the tenth annual trial, the limits of the trial numbers for obtaining the premiums were again reduced, and established as follows: For the 1st, not exceeding 3½ seconds—2d, not exceeding 4½ seconds—3d, not exceeding 6 seconds. Thus making the third rate chronometer as good as the second of the former trials; the trial number of the second within half a second of that of the first in the former trials; and the trial number of the first a second and a half less than the first of the preceding trials. This alone furnishes us with a tolerable criterion to judge of the state of the art in 1831, compared with what it was in 1821.

The tenth annual trial has just terminated, and we find a still further reduction in the trial numbers, which now stand as those established for the eleventh trial. They are as follows: For the 1st, not exceeding 2½ seconds—2d, not exceeding 3½ seconds—3d, not exceeding 4½ seconds; showing another reduction of one second on the two first, and a second and a half on the limits of the third trial number. It might be asked, can these limits be attained by a chronometer? To which we may reply, that they have been; and if the first should not be reached, Government will be no loser, as it will still have the best chronometer, and the maker will obtain a handsome reward.

We shall now lay before our readers the following table, showing the prize chronometers since the first establishment of the trials, the names of their makers, their trial numbers, and the number of chronometers deposited at the Observatory to compete for the prizes at the commencement, and the number left at the end, of each annual trial.

Year.	Premiums.	Makers' Names and Residences.	Number of Chronometer.	Trial Number.	Actual extreme variation in twelve months.	Extremes of Thermometer.	Number of Chronometers.	
							Deposited for Trial.	Left at the end of the Trial.
1823.	First	Mr. Barrand, Cornhill	957	11s29	3.86	25 to 80	31	18
	Second	Mr. Pennington, Camberwell	151	12.87	5.13			
1824.	First	Mr. Murray, Cornhill	816	4.44	1.11	34 to 70	36	18
	Second	Mr. Cathro, Kirby street, Hatton Garden	1512	6.94	1.83			
1825.	First	Mr. Widenham, East street, Red Lion square	929	5.44	1.80	36 to 70	31	9
	Second	Mr. French, Royal Exchange	1640	6.12	1.85			
1826.	First	Mr. French, Royal Exchange	20-3912	2.62	0.61	25 to 82	48	13
	Second		975	3.46	0.99			
1827.	First	Messrs. M'Cabe & Strachan, Cornhill	167	4.68	1.50	29 to 79	59	16
	Second	Mr. Young, Islington	73	5.65	2.00			
1828.	First	Mr. Guy, Radnor street, City road	1410	4.41	1.41	35 to 78	58	25
	Second	Mr. Young, Islington	85	4.52	1.23			
1829.	First	Mr. Dent, 43 King street, Long Acre	114	2.27	0.54	29 to 73	79	26
	Second	Mr. Carter, Tooley street	131	3.30	0.79			
	Third	Mr. Molyneux, 44 Devonshire st., Queen Sqr.	943	4.00	1.28			
1830.	First	Mr. Baker, 6 Angel Terrace, Pentonville	865	3.59	0.98	28 to 80	57	23
	Second	Mr. Carter, Tooley street	137	4.04	1.09			
	Third	Mr. Murray, Cornhill	640	4.34	1.13			
1831.	First	Mr. Cotterell, 163 Oxford street	311	2.93	0.70	27 to 78	73	29
	Second	Mr. Frodsham, Change Alley	2	3.65	0.86			
	Third	Mr. Webster, 43 Cornhill	665	3.73	0.89			
1832.	First	Mr. Molyneux	1033	2.82	0.67	39 to 78	62	23
	Second	Mr. Young	110	2.97	0.82			
	Third	Mr. Webster	695	3.09	0.86			

A glance at the foregoing table will show the truth of our observation on setting out—that a degree of perfection has been attained in the construction of the chronometer, which is not likely to be surpassed until some further discovery be made in it. This must be directed to the balance-spring, and what is termed the "compensation" in the balance-wheel, or the allowance for change of temperature, in which the whole art of chronometer-making now lies. Mr. Arnold's escapement has rendered that part of the construction as complete as can be desired at present, although it is said not to be adopted by our neighbors, the French; and his new lever compensation is a material improvement on those of the circular construction, although the latter display a depth of ingenuity, and acquaintance with the principles of the art, which can only result from many years' application to it.

Many ingenious and highly interesting experiments have been made on these parts of the chronometer, with the view of leading to some discovery respecting them—an account of which we hope to give our readers in some future numbers of our work. Mr. Arnold has already had twelve chronometers deposited at the Royal Observatory, during the last six months, for the purposes of experiment, by the permission of the Lords Commissioners of the Admiralty; and as a proof of his zeal for bringing the chronometer to perfection, he is anxious to place the sum of £100 in the hands of a public board, to be the reward of any *practical* maker who will simplify and improve the performance of the machine.

[From the Elizabethtown Journal.]

EXTENSION OF THE ELIZABETHTOWN AND SOMERVILLE RAILROAD.

Luzerne Co. 10th May, 1833.

"I proceed to answer your inquiries, and give such information as I possess upon the several subjects to which you have directed my attention—as to bituminous coal. Formations of this coal are known to exist in Bradford county and Tioga county, but neither the extent nor the depth of the strata is yet ascertained. Wood abounding, the inhabitants of Bradford county have not sought this coal for fuel, and there being little demand for it, either domestic or foreign, interest, the prime mover of most things, was wanting to induce the investigation. No bed has, I believe, been regularly opened in Bradford county. In the north-east angle of Tioga county, some bituminous coal has been raised, under the influence of the wants of a part of western New-York, and towards which part of the public works of that State are now progressing. The nearest bituminous coal to Pittston is distant about 70 miles, almost directly upon the waters of the Susquehanna, on the waters of the Tawanda creek, and at the northern base of Burnet's mountain.

"As to the communications extending still farther to the north and west, calculated to increase the amount of transportation or travel, upon the Susquehanna and Delaware Railroad, there are several authorized public works, extending from the line of the Susquehanna and Delaware Railroad at Pittston, and above it, necessarily tending to produce that effect; one is the Legget's Gap Railroad, a law for which passed at the session of our legislature previous to the last; the line of this road unites with the Susquehanna and Delaware Railroad in the valley of the Lackawana, near Centreville, about 12 miles north-east of Pittston. From thence the proposed route of this road runs to the great bend of the Susquehanna, above Binghamton, about 50 miles. This would bring the Susquehanna at the great bend within 108 miles of the Delaware, at the water gap. I forward you a report made on this line in 1832, by Mr. Seymour, a competent engineer. From the point whence this strikes the Susquehanna at the great bend, a line of railroad may be run, at an easy grade of about three feet descent in a mile, to Binghamton. Here we meet with the Chenango canal, now authorized to be constructed at the expense of the State of New-York, a work of great magnitude and extent, penetrating into the heart of the empire State, and forming a connection with the Erie Canal. Our interest continues much higher up the north-east branch, which will be evident on an examination of a map of New-York; but I confine myself in this to the authorized or completed public works with which we are at once connected.

"Another extension of the Susquehanna and Delaware Railroad, bearing farther to the north-west, is the Susquehanna river Railroad. An act passed the legislature of Pennsylvania, at its last session, authorizing the governor to incorporate a company to construct a road along the margin of the Susquehanna, on the west side, from a short distance below Wilkesbarre, to the line of our State, near Tioga Point: thus virtually abandoning the North Branch Canal by the State, and establishing the head-quarters of the Pennsylvania works at the dam, on the Lackawana, a little above Pittston. For some of the many reasons for which the Susquehanna and Delaware Railroad ought to be made, this river railroad will be made; at least such is my decided belief. There are overruling interests, which, when understood, will secure the stock's being subscribed. This river line may be graded from Pittston to the State line, above Tioga, (about 86 miles,) at about two and a half feet elevation per mile. From this to Owego, (say 20 miles farther,) nearly equal facilities exist. Here would be a connection with the Owego and Ithaca Railroad, now nearly completed; and the communication would be extended from thence by the Cayuga lake, to an intersection with the Erie Canal, forming a splendid line of works, penetrating the very centre and the most beautiful part of the State of New-York—a connection of itself of sufficient importance to command the admiration of every friend to the improvement of our common country. Proceeding still farther up the north-east branch of the Susquehanna, a railroad may be graded with nearly equal facility to Binghamton, at the entrance of the Chenango canal—forming an available connection with that improvement, in case the shorter route by the Legget's Gap Railroad should be delayed or fail in its execution.

"Returning to Tioga Point, we find the same facilities for a more western extension. Ascending the Chemung or Tioga river, (the north-western branch of the Susquehanna,) with a little higher grade, but on the finest ground for a railroad, at about 20 miles from the Tioga Point, we reach Newtown. Here we meet with the Newtown or Elmira canal, connected with the Crooked Lake canal, and also with the Seneca lake, and come in connection for the third time with the Erie canal.

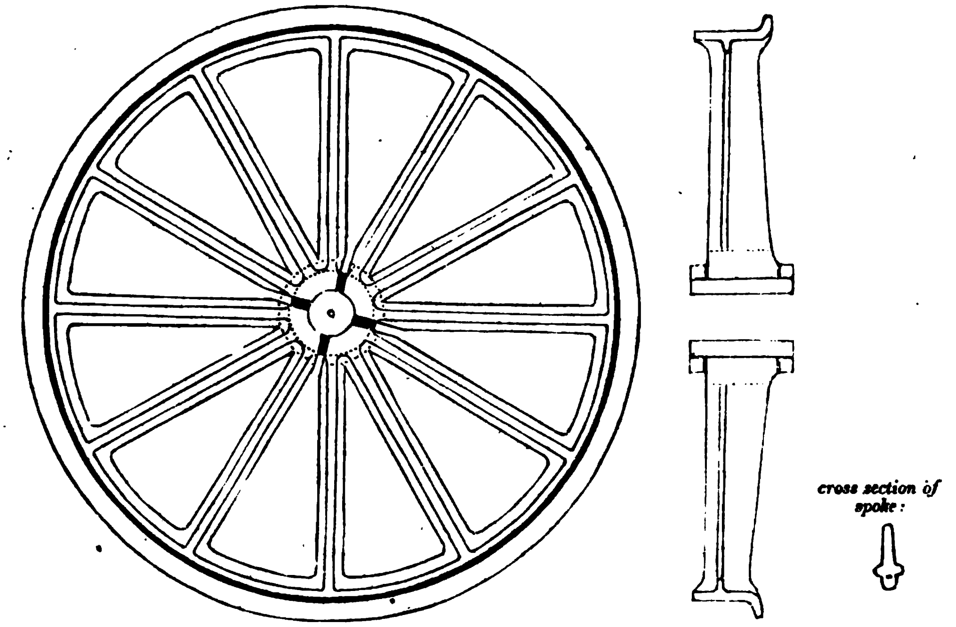
"From Newtown, a canal is about being extended still farther up the Tioga river, intended, as I understand, to facilitate the transportation of bituminous coal, from the deposites south of the Pennsylvanian line to the western part of the State of New-York.

"From Pittston to Tioga Point, from Tioga Point to Owego and Binghamton, and from Tioga Point to Newtown, the grade is so easy, that on a well-constructed railroad, with locomotive power, a few hours travel would connect these points. Tioga Point I have always looked upon as the key of nearly all western New-York. And I have ever believed the natural, as well as artificial, communications connected with this point, destined in the progress of events to bring into and lead through Pennsylvania a great part of the rich products of their most fertile region.

"An early connection of the Susquehanna and Delaware Railroad with Tioga Point, by means of the Legget's Gap or river railroad, would enable it to take charge of a great portion of the Susquehanna trade, to the Delaware at least, and a great portion of it would pass on through New-Jersey to the city of New-York. This trade will probably treble in amount on the completion of these communications. In passing the eye over the map of western New-York, from Tioga Point, no intelligent observer can, I think, fail to be convinced, that to that point all the products of a wide range of fertile and populous territory must surely come, and that if all or any of these are ever to find their way to their own great commercial capital, they must do so by the Pittston, Water Gap, Belvidere, and Elizabethtown Railroads.

"Little has yet been said of the public travel, and of the revenue to be derived from passengers. This item, under present prospects, ought surely to be taken into view. Will not this line of communication, by the Elizabethtown and Somerville, and Susquehanna and Delaware Railroads, if extended, as it is now pretty evident it will be extended, by a continued line of railroad into western New-York, surpass all other routes for the accommodation of travel, and become the most desirable line for passengers, from the city of New-York and the New-England sea-board, to the Falls of Niagara, to Lake Erie, and to the whole western region?

"On this subject we may, I think, with confidence appeal to facts, unchangeable in their nature, and ask those who would consider this line of railroad, with a view to test its merits, to examine the maps, and particularly a map of western New-York, as a map more particularly showing the whole line, the large map of New-Jersey, &c. &c. This, with the facts made known by the Pennsylvania engineers, relative to the north branch of the Susquehanna river, the plan and facilities of the authorized improvements, the report of Captain Beach on the Susquehanna and Delaware Railroad, the accompanying statements of the Commissioners, and the report of the engineers upon the line from Belvidere, via Clinton, Somerville, and Elizabethtown, to New-York, will afford a view of the outline of this interesting project, from which I think its merits cannot fail to be duly appreciated. H. W. D.



Improved Wheel for Railroad Waggons. By J. B. Jervis. To the Editor of the American Railroad Journal.

Utica, July 2, 1833.

Sir,—The annexed drawing is a copy of the plan of a railroad waggon wheel, which I made last year for the Saratoga and Schenectady Railroad Company. The several views given in the drawing will sufficiently explain the plan.

The great importance of obtaining the most perfect plan of a cast iron wheel for railroad waggons will, I presume, render any apology for introducing this subject to your notice unnecessary.

Lightness, a good chill for hardening the face of the rim and flange with adequate strength, all judiciously combined, constitute the important requisites of a good wheel. The broad form required for the track of the rim renders it impracticable to give the metal the best form for strength to resist pressure in the direction to which it is exposed; and the lateral strain to which the wheel is exposed, requires the spokes to be made very broad in proportion to the quantity of metal they contain, which is unfavorable for strength to resist the vertical strain. The plan generally adopted has been to rely on giving thickness to these parts.

The economy of cast iron wheels, over all that have been sufficiently tested, renders it important to obtain the greatest practicable perfection in their construction. In the plan I first made for the Mohawk and Hudson Railroad Company, the rim and spokes were made on the plan annexed, with the exception of the feather, and a trifling variation in the flange. The wheels carried each from three-fourths to seven-eighths of a ton, and were run at a speed of from ten to twenty miles per hour. At high speed they occasionally failed, but proved to be a safe wheel at ten miles per hour. They were run at an average speed of fourteen miles per hour, which in the course of one year broke about 25 per cent. of the stock. I mention this to show the comparative superiority of the new plan in point of strength, while the only essential variation is in the feather on the spokes, and on the underside of the rim. This addition, so important to the strength, has increased the weight of the wheel from 255 lbs. to 275 lbs., making only 20 lbs. difference. This plan has been adopted for all the wheels on the Saratoga Railroad, and all the wheels subsequently obtained for the Mohawk and Hudson Railroad have been on the same plan. A few have recently been procured on the Mohawk and Hudson, which are a modification of this plan, and which experience may prove advantageous. They have been nearly a year in use on both roads, and not a single wheel in the passenger carriages have failed. An imperfect wheel in a tender waggon broke, which is the only instance of failure on this plan. The test they have undergone has proved, I think, satisfactorily, that they are a safe wheel for the load before mentioned, moving at a speed of fifteen miles per hour. They have often been run under that load at a speed of twenty miles, and in some instances at twenty-five miles per hour. Experience has shown that when a speed of fifteen miles per hour is taken as the general rate of travelling, it will frequently happen that a velocity of twenty miles will be made. In providing strength it is therefore necessary to keep this in view.

The diameter of the wheel is three feet. I made a plan of a wheel two and a half feet in diameter, in which the feather was adopted for the Rochester Railroad Company. They have had the wheels in use nearly one year, and, though the planw as quite light, no instance of failure has occurred.

Should further experience confirm what has thus far proved highly favorable, it will hardly be necessary to resort to the more expensive plans of wood and wrought iron for wheels, when an average speed of fifteen miles per hour will be adequate to the demands of the business to be done; and which may be taken in general as a fair business calculation.

On a railroad judiciously located and constructed, a locomotive steam engine may move at this speed with ease, safety, and economy. With proper attention it will be easily kept in order for regular work.

Respectfully, your obedient servant,

John B. Jervis.

P. S.—The new Locomotive for the Saratoga and Schenectady road is at work, and in a few days you may expect from me some account, according to promise. In the mean time, I hope you will not publish any of the irresponsible notices that may be made of it.

On the Protection of Timber when used in Railways. By J. L. Sullivan. To the Editor of the American Railroad Journal.

Sir,—The objections of "Mercator" to a method I suggested of protecting timber when used in railways are obviated by merely giving the true explanation of the accidents he adduces in doubt of its efficacy. If he should suggest a better method, and will advocate it under his proper signature, it will certainly be very acceptable.

The explanation of the decay of the sleepers of the "Arcade," in seven years instead of forty, is that they were not only in an *unventilated* place, but in contact with green mortar of *common lime*. Now, as my suggestion was not the use of common lime alone, no more need to be said: but this would not be sufficiently satisfactory to one so undiscriminating. The use of lime in making mortar always supposes the progressive process of re-crystalization, which takes a long time—in ancient Rome, mortar was not used until two years old,—and *during this process it attracts moisture from the atmosphere*: and, ofcourse, would impart moisture to any dryer substance in contact with it, so that it must be bad building to surround the end of a sleeper with it.

Common lime was proposed in my specification to be used only in combination with a resinous substance, pitch, or tar, for the purpose of forming a hard adhesive defence. Nor was it theory alone, but practice in other arts, that suggested it in this. It is not indeed usual, but I have known this mixture used between the sheathing and bottom of vessels, where it makes at first a very soft, but afterwards a very hard coat, when the lime, taking up the water in the tar, becomes re-crystalized. Hence I supposed it would have the same properties in any other situation. It is thus from analogy and principle that improvements are always suggested *before trial*; indeed, there is no time for *trial* of things that *time alone* can try. The *test* has been in the experience of analogous circumstances.

The method also proposed the use of hydraulic lime and fragments of stone to form a defence of the post at and near the surface of the ground, or a little below and above it. Now it is well known that *this lime recrystalizes quickly—that is, it sets* in about a fortnight. But if it were, as "Mercator" suggests, rolled up in a ball and placed in a plate of water, it is probable it would, while green, absorb among its particles some water. In building walls of locks, the water is not let in till the mortar has had time to set. Why, then, should it not set among fragments around a post?

He says that Roman cement and pitch will absorb water by "capillary attraction." This is rather absurd, and actually contrary to experience. We line cisterns with Roman cement; and pitch would be of no use on the bottom of vessels, if it *transmitted* water. These effects cannot take place in this way, because neither of them are of fibrous texture.

How then shall we account for the short duration of pitch on the bottoms of vessels? It will not adhere to them at all, unless the surface be dry. It may not be perfectly so, unless the vessel is a new one; and in time the planks become water-soaked or damp from the inside, and the pitch may thus be gradually dislodged by the interposition of wetness; or, it may be supposed to be *worn off by the friction* of the water the vessel glides through, while the pitch on her upper works remains firm.

Let us then suppose a railway resting on posts deep enough set not to be hove by frost, and the top first covered with a water-proof cement and capped with the rail-bearer, and defended at the surface of the ground in the abovementioned manner, or, perhaps still better, by the use of the *mineral fusible cement*,—can it be doubted that the posts would not last longer than if this precaution were not taken?

Do we not thus prevent one of the causes that must combine to hasten decay in that part?

It is true, the post will, in the ground, be in a damp situation, but its *lower part is cooler* than at the surface; and any natural wetness in the timber either evaporates above, or settles down to the bottom of it. If, by a good choice of wood, and a little care, we make the posts last three or four times as long as otherwise, it is no small advantage. Cedar or locust are expensive and not always at command; and even these will, with precaution, retain size and strength.

The use of posts as a support was also intended to allow the bearing *timbers to be raised* so much from the ground that the air would circulate freely under them, and the water run off. For the common practice of laying these timbers on embedded cross-sleepers *brings them in contact* with the ground, and hastens decay, besides other disadvantages of this mode of foundation, liable to arise from unequal resistance in a bed of earth soft in the spring of the year.

Perhaps it was for these and like considerations, that Maj. Douglass recommended, in his report and estimate for the Jamaica Railway, the use of *posts*. He did not, indeed, suggest precautions at the surface, because, perhaps, as locust abounds or cedar can be had cheap, it was not thought necessary. It is likely that when this kind of timber is used, and a pile-driver employed to set them in two rows, this will be deemed better practice than cross-sleepers.

Your correspondent asks for practical results: he may have yet to learn that improvements, of much more pretensions than this, often wait a long time for the public attention and favor, till those who are most interested feel the want and seek the remedy.

If it be true that, in this country, where timber is cheap and iron dear, (the very reverse of the case in England,) we must in some situations have timber railways, then, to make them durable and to *avoid the causes of premature decay*, especially, will be for the interest of stockholders and the public.

J. L. Sullivan.

Vocal Clock.—"On Monday, April 27, 1762," says Wesley in his Journal, "being at Lurgan, in Ireland, I embraced the opportunity which I had long desired, of talking with Mr. Miller, the contriver of that statue, which was in Lurgan when I was there before. It was the figure of an old man standing in a case, with a curtain drawn before him, over against a clock, which stood on the opposite side of the room. Every time the clock struck he opened the door with one hand, drew back the curtain with the other, turned his head, as if looking round on the company, and then said with a clear, loud, artieulate voice, "past one," or "two," or "three," and so on. But so many came to see this (the like of which all allowed was not to be seen in Europe), that Mr. Miller was in danger of being ruined, not having time to attend to his own business. So as none offered to purchase it, or reward him for his pains, he took the whole machine to pieces."

Useful Discovery.—A machine has been invented and put in operation, in Philadelphia, for napping hats by steam. The editor of the Philadelphia Inquirer recently witnessed the performance of this machine in a hat manufactory, and speaks in high terms of its capabilities. The beauty and superiority of the work are at once admitted by all who have examined it. It is not stated whether or not the process is more rapid than by the old method; but it is held to turn out a much better article, as the napping process requires very hot water, and steam applied to the same purpose may be many degrees hotter than boiling water. The invention is thought to be a very useful one.

to postpone the attainment of this object. In the midst of the reflections which your story has suggested, and with feelings keenly awake to the heavy, the extensive injury we have sustained, I feel a secret joy and satisfaction that you possess a mind in this respect similar to my own—that you are not disheartened—that you do not relinquish the pursuit—and that you will persevere and endeavor, at all events, to attain the main object. This is exactly consonant to my own determinations. I will devote all my time, all my thoughts, all my exertions, and all the money I can earn or borrow, to encompass and complete the business we have undertaken; and if fortune should, by any future disaster, deny us the boon we ask, we will at least deserve it. It shall never be said that we have lost an object which a little perseverance could have attained. I think, indeed, it will be very extraordinary, if two young men in the prime of life, with some share of ingenuity, with a little knowledge of the world, a great deal of industry, and a considerable command of property, should not be able to sustain such a stroke of misfortunes as this, heavy as it is."

While struggling with these multiplied misfortunes, intelligence was received from England, which threatened to give a final blow to all their hopes. It was, that the English manufacturers condemned the cotton cleaned by their machines, on the ground that the staple was greatly injured.

At this time (1796) Miller and Whitney had thirty gins at eight different places in the State of Georgia, some of which were carried by horses or oxen, and some by water. A number of these were standing still for want of the means of supplying them. The company had also invested about $10,000 in real estate, which was suited only to the purposes of ginning cotton. All things now conspired to threaten them with deep insolvency.

We have before us a letter written by Mr. Whitney, dated Oct. 7th, 1797, from which it will be seen what was the state of his affairs, and of his feelings, at this period: "The extreme embarrassments (says he) which have been for a long time accumulating upon me, are now become so great that it will be impossible for me to struggle against them many days longer. It has required my utmost exertions to exist, without making the least progress in our business. I have labored hard against the strong current of disappointment, which has been threatening to carry us down the cataract, but I have labored with a shattered oar, and struggled in vain, unless some speedy relief is obtained."

However, brighter prospects seemed now to be opening upon them, from the more favorable reports that were made respecting the quality of their cotton. Respectable manufacturers, both at home and abroad, gave favorable certificates; and retailing merchants sought for the cotton cleaned by Whitney's gin, because it was greatly preferred by their customers to any other in the market. This favorable turn in public opinion would have restored prosperity to the company, had not the encroachments on their patent right become so extensive as almost to annihilate its value.

In April, 1799, Mr. Miller writes as follows: "The prospect of making any thing by ginning in this State is at an end. Surreptitious gins are erected in every part of the country; and the jurymen at Augusta have come to an understanding among themselves, that they will never give a cause in our favor, let the merits of the case be as they may."

Many of the planters of South Carolina having expressed an opinion, that, if an application were made to their legislature by the citizens to purchase the right of the patentees for that State, there was no doubt that it would be done to the satisfaction of all parties. Accordingly Mr. Whitney repaired to Columbia, taking the city of Washington in his way, where he was furnished with very obliging letters from President Jefferson and Mr. Madison, then Secretary of State: testimonials which, no doubt, were of great service to him in his subsequent negociations. Soon after the opening of the session of the legislature in the month of December, 1801, the business was regularly brought before the legislature, and a joint committee of both Houses appointed to treat with the patentees.

We subjoin an extract of a letter addressed at this time by Mr. Whitney to his friend Stebbins, both as a statement of the particulars relating to the contract, and as evincive of the feelings of the writer:

"COLUMBIA, S. C., Dec. 20, 1801.

"DEAR STEBBINS,—I have been at this place a little more than two weeks, attending the legislature. They closed their session at ten o'clock last evening. A few hours previous to their adjournment, they voted to purchase, for the State of South Carolina, my patent right to the machine for cleaning cotton at fifty thousand dollars, of which sum twenty thousand is to be paid in hand, and the remainder in three annual payments of ten thousand dollars each. This is selling the right at a great sacrifice. If a regular course of law had been pursued, from two to three hundred thousand dollars would undoubtedly have been recovered. The use of the machine here is amazingly extensive, and the value of it beyond all calculation. It may, without exaggeration, be said to have raised the value of seven-eighths of all the three southern States from fifty to one hundred per cent. We get but a song for it in comparison with the worth of the thing; but it is securing something. It will enable Miller and Whitney to pay all their debts, and divide something between them. It establishes a precedent, which will be valuable as it respects our collections in other States, and I think there is now a fair prospect that I shall in the event realize property enough to render me comfortable, and in some measure independent."

In December, 1802, Mr. Whitney negociated a sale of his patent right with the State of North Carolina. The legislature laid a tax of two shillings and sixpence upon every saw* employed in ginning cotton, to be continued for five years, which sum was to be collected by the sheriffs in the same manner as the public taxes; and after deducting the expenses of collection, the avails were faithfully paid over to the patentee. At that time the culture of cotton had made comparatively little progress in the State of North Carolina, but in proportion to the amount of interest concerned, this compensation was regarded by Mr. Whitney as more liberal than that received from any other source.

While these encouraging prospects were rising in North Carolina, Mr. Goodrich, an agent of the company, was entering into a similar negociation with the State of Tennessee. The importance of the machine began to be universally acknowledged in that State, and various public meetings of the citizens were held, in which were adopted resolutions strongly in favor of a public contract with Miller and Whitney. Accordingly the legislature of Tennessee, at their session in 1804, passed an act laying a tax of thirty-seven and a half cents per annum on every saw for the period of four years.

But while a fairer day seemed dawning upon the company in this quarter, an unexpected and threatening cloud was rising in another. It was during Mr. Whitney's negociation with the legislature of North Carolina that he received intelligence that the legislature of South Carolina had annulled the contract made with Miller and Whitney the preceding year, had suspended payment of the balance (thirty thousand dollars) due them, and instituted a suit for the recovery of what had already been paid to them.

The ostensible causes of this extraordinary measure, adopted by the legislature of South Carolina, were a distrust of the validity of the patent right, and failure on the part of the patentees to perform certain conditions agreed on in the contract. Great exertions had constantly been made in Georgia to impress the public with the notion that Mr. Whitney was not the original inventor of the cotton gin, somebody in Switzerland having conceived the idea of it before him; and especially that he was not entitled to the credit of the invention in its improved form, in which saws were used instead of wire teeth, inasmuch as his particular form of the machine was introduced by one Hodgin Holmes. It was on these grounds that the Governor of Georgia, in his message to the legislature of that State in 1803, urged the inexpediency of granting any thing to Miller and Whitney.

Popular feeling, stimulated by the most sordid motives, was now awakened throughout all the cotton-growing States. Tennessee followed the example of South Carolina in suspending the payment of the tax laid upon cotton gins, and a similar attempt was made at a subsequent session of the legislature of North Carolina, but it wholly failed, and the report of a committee offering a resolution, that "the contract ought to be fulfilled with punctuality and good faith," was adopted by both branches of the legislature.

There were also high minded men in South Carolina, who were indignant at the dishonorable measures adopted by their legislature of 1803, and their sentiments had impressed the community so favorably with regard to Mr. Whitney, that at the session of 1804 the legislature not only rescinded what the previous legislature had done, but signified their respect for Mr. Whitney by marked commendations.

At this time a new and unexpected responsibility devolved on Mr. Whitney, in consequence of the death of his partner, Mr. Miller, who died on the 7th December, 1803.

Mr. Whitney was now left alone to contend singly against those difficulties which had for a series of years almost broken down the spirits of both the partners. But the favorable issue of the affairs of Mr. Whitney in South Carolina during the subsequent year, and the generous receipts that he obtained from the avails of his contracts with North Carolina, relieved him from the embarrassments under which he had so long groaned, and made him in some degree independent. Still, no small portion of the funds thus collected in North and South Carolina was expended in carrying on the fruitless, endless law-suits in Georgia.

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* Some of the gins had forty saws.

In the United States Court, held in Georgia in December, 1807, Mr. Whitney obtained a most important judgment, in a suit brought against a trespasser of the name of Fort. It was on this trial that Judge Johnson gave the decision in his favor, to which we have before alluded.

This favorable decision, however, did not put a final step to aggression. At the next session of the United States Court, two other actions were brought, and verdicts for damages gained, of two thousand dollars in one case, and one thousand and five hundred dollars in the other.

The influence of these decisions, however, availed Mr. Whitney very little, for now the term of his patent right was nearly expired. More than sixty suits had been instituted in Georgia before a single decision on the merits of his claims was obtained, and at the period of this decision, thirteen years of his patent had expired.

In 1798, Mr. Whitney became deeply impressed with the uncertainty of all his hopes founded upon the cotton gin, notwithstanding their high promise, and he began to think seriously of devoting himself to some business in which superior ingenuity, seconded by uncommon industry, qualifications which he must have been conscious of possessing in no ordinary degree, would conduct him by a slow but sure route to a competent fortune; and we have always considered it indicative of a solid judgment, and a well balanced mind, that he did not, as is frequently the case with men of inventive genius, become so poisoned with the hope of vast and sudden wealth as to be disqualified for making a reasonable provision for life, by the sober earnings of frugal industry.

The enterprize which he selected in accordance with these views was the manufacture of arms for the United States. He accordingly addressed a letter to the Hon. Oliver Wolcott, Secretary of the Treasury, and through his influence obtained a contract for ten thousand stand of arms, amounting (as the price of each musket was to be thirteen dollars and forty cents) to one hundred and thirty-four thousand dollars—an undertaking of great responsibility, considering the limited pecuniary resources of the undertaker. This contract was concluded on the 14th of January, 1798, and four thousand were to be delivered on or before the last day of September of the ensuing year, and the remaining six thousand within one year from that time, so that the whole contract was to be fulfilled within a little more than the period of two years: and for the due fulfilment of it, Mr. Whitney entered into bonds to the amount of thirty thousand dollars. He must have engaged in this undertaking resolved "to attempt great things," without stopping to weigh all the chances against him, for as yet the works were all to be erected, the machinery to be made, and much of it to be invented; the raw materials were to be collected from different quarters, and the workmen themselves, almost without exception, were yet to learn the trade. Nor was it a business with which Mr. Whitney himself was particularly conversant. Mechanical invention, a sound judgment, and persevering industry, were all that he possessed, at first, for the accomplishment of an enterprize which was, at that time, probably greater than any man had ever undertaken in the State of Connecticut.

The site which Mr. Whitney had purchased for his works was at the foot of the celebrated precipice called East Rock, within two miles of New-Haven. This spot, (which is now called Whitneyville), is justly admired for the romantic beauty of its scenery. A waterfall of moderate extent afforded here the necessary power for propelling the machinery. In this pleasant retreat Mr. Whitney commenced his operations with the greatest zeal; but he soon became sensible of the multiplied difficulties which he had to contend with. A winter of uncommon severity set in early, and suspended his labors; and when the spring returned, he found himself so little advanced that he foresaw that he should be utterly unable to deliver the four thousand muskets according to contract. At the end of the first year after the contract was made, instead of four thousand muskets, only five hundred were delivered, and it was eight years, instead of two, before the whole ten thousand were completed. The entire business relating to the contract was not closed until January, 1809, when (so liberally had the government made advances to the contractor) the final balance due to Mr. Whitney was only 2,450 dollars.

In the year 1812, he entered into a new contract with the United States to manufacture for them fifteen thousand stand of arms; and in the mean time he executed a similar engagement (we know not how extensive) for the State of New-York.

It should be remarked, that the utility of Mr. Whitney's labors, during the period of his life which we have now been contemplating, was not limited to the particular business in which he was engaged. Many of the inventions which he made to facilitate the manufacture of muskets, were applicable to most other manufactures of iron and steel. To many of these they were soon extended, and became the nucleus around which other inventions clustered; and at the present time some of them may be recognized in almost every considerable workshop of that description in the United States.

In the year 1812, Mr. W. made application to Congress for the renewal of his patent for the cotton gin. In his memorial he presented a history of the struggles he had been forced to encounter in defence of his right, observing that he had been unable to obtain any decision on the merits of his claim until he had been *eleven years* in the law, and *thirteen years* of his patent term had expired. He set forth, that his invention had been a source of opulence to thousands of the citizens of the United States; that, as a labor-saving machine, it would enable one man to perform the work of a thousand men; and that it furnishes to the whole family of mankind, at a very cheap rate, the most essential article of their clothing. Hence, he humbly conceived himself entitled to a further remuneration from his country, and thought he ought to be admitted to a more liberal participation with his fellow citizens in the benefits of his invention. Although so great advantages had been already experienced, and the prospect of future benefits was so promising, still, many of those whose interest had been most promoted, and the value of whose property had been most enhanced, by this invention, had obstinately persisted in refusing to make any compensation to the inventor. The very men whose wealth had been acquired by the use of this machine, and who had grown rich beyond all former example, had combined their exertions to prevent the patentee from deriving any emolument from his invention. From that State, in which he had first made and where he had first introduced his machine, and which had derived the most signal benefits from it, he had received nothing; and from one State had he received the amount of *half a cent per pound* on the cotton cleaned with his machines in one year. Estimating the value of the labor of one man at twenty cents per day, the whole amount which had been received by him, for his invention, was not equal to the value of the labor saved *in one hour* by his machines then in use in the United States.

Notwithstanding these cogent arguments, the application was rejected by Congress. Some liberal minded and enlightened men from the cotton districts favored the petition; but a majority of the members from that section of the Union were warmly opposed to granting it.

In the midst of these fruitless efforts to secure to himself some portion of the advantages which so many of his fellow citizens were reaping from his ingenuity, his armory proceeded with a sure but steady pace, which bore him on to affluence. For the few following years he occupied himself principally in the concerns of his manufactory, inventing new kinds of machinery, and improving and perfecting the old.

In January, 1817, Mr. Whitney was married to Miss Henrietta F. Edwards, youngest daughter of the honorable Pierpont Edwards, late Judge of the District Court for the State of Connecticut. The fond and quiet scenes of domestic life, after which he had long aspired, but from which he had been debarred by the embarrassed or unsettled state of his affairs, now spread before him in the fairest light. Four children, a son and three daughters, added successively fresh attractions to the family circle. Happy in his home, and easy in his fortune, with a measure of respectability among his fellow citizens, and celebrity abroad, which might well satisfy an honorable ambition, he seemed to have in prospect, after a day of anxiety and toil, an evening unusually bright and serene.

In this uniform and happy tenor, he passed the five following years, when a formidable malady began to make its approaches, by a slow but hopeless progress, which at length terminated his life.

From the 12th November, 1824, his sufferings became almost unremitted, until the 8th January, 1825, when he expired,—retaining his consciousness to the last, closing his own eyes, and making an effort to close his mouth.

In his person, Mr. Whitney was considerably above the ordinary size, of a dignified carriage, and of an open, manly and agreeable countenance. His manners were conciliatory, and his whole appearance such as to inspire universal respect. Among his particular friends no man was more esteemed. Some of the earliest of his intimate associates were also among the latest. With one or two of the bosom friends of his youth he kept up a correspondence by letter for thirty years, with marks of continually increasing regard. His sense of honor was high, and his feelings of resentment and indignation occasionally strong. He could, however, be cool when his opponents were heated; and though sometimes surprized by passion, yet the unparalleled trials of patience which he had sustained did not render him petulant, nor did his strong sense of the injuries he had suffered in relation to the cotton gin impair the natural serenity of his temper.

But the most remarkable trait in the character of Mr. Whitney, aside from his inventive powers, was his *perseverance;* and this is the more remarkable, because it is so common to find men of great powers of mechanical invention defective in this quality. Nothing is more frequent than to see a man of the most fertile powers of invention run from one piece of mechanism to another, leaving the former half finished; or if he has completed any thing, it is usual to find him abandon it to others, too fickle to pursue the advantages he might reap from it, or too sensitive to struggle with the sordid and avaricious, who may seek to rob him of the profits of his invention.

It would be difficult to estimate the full value of Mr. Whitney's labors without going into a minuteness of detail inconsistent with our limits. Every cotton garment bears the impress of his genius, and the ships that transported it across the waters were the heralds of his fame; and the cities that have risen to opulence by the cotton trade must attribute no small share of their prosperity to the inventor of the cotton gin. We have before us the declaration of the late Mr. Fulton, that Arkwright, Watt, and Whitney, (we could add Fulton to the number), were the three men who did most for mankind of any of their contemporaries; and, in the sense in which he intended it, the remark is probably true.

The following observations of a distinguished scholar and statesman, elicited in consequence of a recent visit to the cemetery of New-Haven, evince the estimation in which Mr. Whitney's name is held, by one who is fully capable of appreciating his merits. After alluding to the monument of Gen. Humphreys, who introduced the fine woolled sheep into the United States, the stranger remarks: "But Whitney's monument perpetuates the name of a still greater public benefactor. His simple name would have been epitaph enough, with the addition, perhaps, of 'the inventor of the cotton gin.' How few of the inscriptions in Westminster Abbey could be compared with that! Who is there that, like him, has given his country a machine—the product of his own skill—which has furnished a large part of its population, 'from childhood to age, with a lucrative employment: by which their debts have been paid off; their capitals increased; *their lands trebled in value.*' It may be said, indeed, that this belongs to the physical and material nature of man, and ought not to be compared with what has been done by the intellectual benefactors of mankind—the Miltons, the Shakspeares, and the Newtons. But it is quite certain that any thing short of the highest intellectual vigor—the brightest genius—is sufficient to invent one of these extraordinary machines. Place a common mind before an oration of Cicero and a steam engine, and it will despair of rivalling the latter as much as the former; and we can by no means be persuaded, that the peculiar aptitude for combining and applying the simple powers of mechanics so as to produce these marvellous operations, does not imply a vivacity of the imagination, not inferior to that of the poet and the orator. And then, as to the effect on society, the machine, it is true, operates, in the first instance, on mere physical elements, to produce an accumulation and distribution of property. But do not all the arts of civilization follow in the train? and has not he, who has trebled the value of land, created capital, rescued the population from the necessity of emigrating, and covered a waste with plenty—has not he done a service to the country, of the highest moral and intellectual character? Prosperity is the parent of civilization, and all its refinements; and every family of prosperous citizens added to the community, is an addition of so many thinking, inventing, moral, and immortal natures."

On Mr. Whitney's tomb is the following inscription:

ELI WHITNEY,
The inventor of the Cotton Gin.
Of useful science and arts, the efficient
patron and improver.
In the social relations of life, a model of excellence.
While private affection weeps at his tomb,
his country honors his memory.
Born December 8, 1765.—Died January 8, 1825.

NEW-YORK AMERICAN.

JULY 13, 15, 16, 17, 18, 19—1833.

LITERARY NOTICES.

Observations on Professions, Literature, Manners, and Emigration, in the United States and Canada, by the Rev. Isaac Fidler: N. Y. J. & J. Harper.—The *Rev. Isaac* came hither from England in 1832, a radical in politics, and a disappointed churchman. He knew a great deal of Hebrew, Sanscrit, and Arabic, and very little of the world; and therefore reasoned very logically and wisely, that if in an old rich country—where time and means are abundant for acquiring every sort of knowledge—his stock of Eastern languages could not find a market, there could be no reason to doubt that in a comparatively new country, and in the midst of a really working and ever active population, absorbed for the most part in providing for the material wants of life, they would be in ready demand. Upon this syllogism he emigrated, and soon made the discovery, that as his premises were eroneous, so were his conclusions; and that the man who came among us to teach Sanscrit for a living, would fare almost as well as a breeches-maker might among kilted Highlanders.

The *Rev. Isaac*, therefore, very soon retraced his steps, converted by his great horror of American democracy—and, above all, their insensibility to his merits—into a warm admirer of his own country, and almost into a believer in the possibility of rising in the church without patronage. We have before at times quoted passages from this book, sufficient to show its general ill-informed and splenetic judgments concerning every thing American. We mark a single one only to-day, to shew into what hands the clerical radical fell, on his arrival in this city:

The person at whose house we had taken lodgings was an Englishman, a painter, who informed me that he had lived some years in Liverpool; but from the heavy weight of rates, tithes, and taxes, he had not been able to gain a living. He still had a shop there, and intended to return if the reform bill should pass. He so often spoke with contempt and bitterness of kings, nobility, priests, and taxes, that it was evident at once under what denomination he might be classed. He was a radical, a gambler, a frequenter of Tammany Hall, and of the lowest society. I blushed to think that such a person and myself should have entertained similar sentiments on such a subject. He had gone to America to improve his condition, but had not found that improvement realized. He hated, and cordially railed at the American people, their manners, and the prejudices they entertained against the English. His wife, a most worthy and industrious woman, told us, that had her husband been industrious and careful, they might have saved money, and been independent, but that they could, with the same means, have been much more comfortable in Liverpool.

After we were somewhat settled, I found time to look around me, and consider what was passing. It seemed to me probable, that there was as much distress in New York, in proportion to the population, as in London. We saw and relieved several beggars in the streets of that city. The number, also, of paupers who were relieved by charity, was very great. I think the excessive charges for house rent and fuel must be severely felt by persons of slender means. There must be a great want of capital among coal and wood merchants, or a total absence of proper regulations. Sufficient fuel had not been provided to supply the regular consumption of the city; and its value became so enhanced in consequence, as to be almost out of the reach of the poor. The coals we consumed were double the price of what coals had cost in the summer. The coal-merchants had promised, before the winter commenced, that they would supply the people at summer prices. But promises are slight obligations, when put in competition with interest. We paid for coal at the rate of seventeen dollars a ton. While in England, we thought forty shillings a chaldron a high price; but in New York they were twice that sum.

Scott's Works, Vol II,—comprising the seven numbers already published of Conner & Cooke's cheap edition—constitutes a very handsome volume indeed, large 8vo. Seven such will complete the work.

On the Adaptation of External Nature to the Physical Condition of Man, &c. &c. by John Kidd, M. D. &c. Regius Professor of Medicine at Oxford. Philadelphia, Carey, Lea, & Blanchard.—This is the second of the Bridgewater Treatises, that of Professor *Whewell*, on Astronomy and General Physics, noticed in this paper some weeks ago, being the first. The design of all these treatises, of which there are to be eight, is, as most of our readers doubtless remember, to elucidate, in compliance with a provision in the will of the late Earl of Bridgewater, "the Power, Wisdom, and Goodness of God, as manifested in the Creation." In order to stimulate adequate talent to undertake the work, *eight thousand pounds* were appropriated by the noble and reverend testator, to be paid for it, leaving to the author, moreover, the whole benefit to be derived from the sale of his writings. Whether wisely or not, it may yet be too early to determine, it has been deemed proper to divide the subject into eight parts, assigning £1000 to each. Hence the volume now before us. As a separate and popular treatise, embodying a train of facts, rather then entering into any controversial discussion, and pointing out skilfully, and often unexpectedly, evidences of the adaptation of the external world to the organization, wants, and powers of man,—it is certainly well executed, and fulfils satisfactorily its design. It is, too, so wholly free from scientific *pretension*, though written with full and well-considered knowledge, that it will attract many readers, whom an array of learned terms might have discouraged. It is a volume that may be read with satisfaction, even after Paley's comprehensive and admirable Natural Theology.

Greenbank's Periodical Library, No's 1 to 7. *T. K. Greenbank*, No. 9, Franklin Place, Philadelphia.—This is the title of an octavo work in pamphlet form, issued weekly at $5 per annum. It consists of Voyages, Travels, History, Biography, Select Memoirs, popular science, personal adventures, Poems, &c. &c., each No. containing 48 pages, and the whole, when bound in volumes at the end of the year, making a collection of 2500 pages; thus constituting a work which, if well selected, can only be rivalled in cheapness by the handsome edition of the Waverley Novels now publishing by Messrs. Conner & Cooke, of this city, another number of which has just appeared. Among the subjects of the numbers before us, we find Hazlitt's Travels in Europe—the History of Peter the Great—Mr. Lambe's admired Essays under the title of Elia—and "the History and Trials of Henry Pestalozzi," with copious extracts from his works, illustrative of his plan of Education—and lastly, a brief Memoir of Korner, the German poet, written by his father.

The history of this interesting character, though he left four volumes of writings upon a variety of subjects behind him, when he died at the early age of two and twenty, is but little known to the English reader, except through the poetry of Mrs. Hemans. It is well that a name so associated with deeds of valor and patriotic song, and that is dear to idolatry to every German heart, should be more familiar to our ears; and we therefore, though shrinking from thus mutilating the well told story of his romantic life, before us, venture upon a compendium of a Memoir which has given us almost thrilling pleasure in the perusal.

Carl Theodore Korner, born 23d Sept. 1791, was the son of a Saxon counsellor of appeals, who seems early to have appreciated the remarkable character of his son, even though his early childhood was not distinguished by that precocity of knowledge which, in some instances, so gratifies the vanity of parents. "Tenderness of heart, and strong affection for those who had won his love, united with singular firmness and strength of mind, and very quick and lively powers of fancy," are mentioned as the distinguishing features of his character at a very early period of his life. To these we may add, that a sentiment of piety, or, as phrenologists would term it, *veneration*, seems early to have been a marked quality of his natural disposition; and even when in extreme youth, and full of boyish vivacity, he conceived the idea of "a pocket-book for Christians," which was to consist of historical treatises, spiritual sonnets, and passages from scripture illustrated with engravings; a great part of which plan he actually executed while pursuing his academical career at Fryburgh. The eventful part of Korner's life commences about the age of 19, when, after leaving college, we find him at Vienna, full of youthful life and spirit, associating with Humboldt and Schlegel, and devoting his mornings to assiduous study; while his evenings were passed in the best society which that refined capital affords. His varied acquirements and high accomplishments here received their last finish; and the hopes of his judicious father, in placing the gifted youth "on a distinguished po[illegible] where his mental horizon would be extended, and his inclination to advancement and to perfection incited and encouraged," were fully accomplished in the advancement made by Korner in general knowledge and reputation. He who had so energetically availed himself of every opportunity of studying books and men, became an author himself, and made the living world the test of his powers. The nature of his early studies, the habits of the last few months of his life, and the distinctions attending success as a dramatic writer at Vienna, with, perhaps, some strong prepossessions for the course of Schiller, with whom he was a favorite protegé at ten years of age, determined Korner to write for the stage.

His first essays, says his biographer, consisted of two one-act pieces, in Alexandrines—the Bride, and the Green Domino, which were both received with much applause. A farce called the Night-watch was also very successful. Korner now began to attempt subjects of a passionate and tragic nature, which had ever possessed great attractions for him. A tale of Heinrich von Kleist's was, with some alterations, worked up into a drama in three acts, called Toni. Soon after followed a terrific tragic piece, in one act, called the Expiation. He now considered himself prepared to venture on the production of the Hungarian Leonidae, Zriny. This was followed by an appalling drama, called Hedwig, and a tragedy called Rosamund, taken from English history. His last dramatic work of a serious kind, Joseph Heyderich, was founded on a real incident, the self-sacrifice of a brave Austrian subaltern officer, who devoted his own life to save that of his lieutenant. He still found time, notwithstanding these works, to produce three small comic pieces, the Cousin from Bremen, the Officer of the Guard (Wacht-Meister,) and the Governess; also two operas, the Fisher-girl, or Hatred and Love; and the Four Years' Post (der vierjahrige Posten,) as well as several small poems, and he also concluded an opera commenced some time before, the Miners (Die Bergknappen.) Part of an opera which he had writted for Beethoven, The Return of Ulysses, was also ready, and he had, likewise, prepared a multitude of plans, both of small and large pieces. It would not have been possible to accomplish all this in the short space of fifteen months, had he not possessed great facility of composition, which he had acquired by his numerous early exercises. The collecting the historic materials, and sketching the plan, was what cost him most time; and, as an example of his rapidity, he was able to write a large work in the space only of a few weeks of entire seclusion and uninterrupted exertion. A summer's residence at Doblingen, an agreeable village near Vienna, afforded every facility of this kind.

His productions experienced, on the whole, a reception far beyond his expectations. The public feeling showed itself the most enthusiastically at the first representation of Zriny. The author was called to appear before the audience in person, an honor altogether unusual in Vienna. But the single voices of certain critical judges, the favorable opinion of the judicious few, was yet more gratifying to his feelings. The friendly judgment of Goethe reached him from afar; and, by his influence, the Bride, the Green Domino, and the Expiation, were brought out at Weimar, with particular care and with eminent success.

Korner was now, at the age of twenty, where most literary men have been contented at arriving, with an additional score of years upon their heads. Wealth, or at least a competency, was, as well as reputation, his; he received an official appointment from the Government, in consequence of the public approbation that attended his literary efforts, and everything seemed to combine to make his lot most enviable; while he still preserved that steadiness of soul which is both the companion and the guardian of magnanimity, and keeps the soaring mind from being chained down to the height of fame it has first won, by fixing its eagle ken upon the loftier elevations yet to be attained.

"The world of joy, (says the father of Korner) by which he was now surrounded, and in which he soon found himself at home, excited in him feelings of accordant kind. Far from being enervated by it, his ardent nature received a new impulse; all his faculties were excited: and the objects of his emulation were constantly placed higher. And no instructive, warning, or exciting voice was ever heard in vain, when it had once gained his esteem, whether by intellect, knowledge and experience, or by the charms of female accomplishment. In this manner he was much indebted, not only to the intimacy of Humboldt, and of Schlegel, but also to the elegant society which met at the house of the celebrated female poet, Caroline Pichler, and of Madame de Pereira. But it was to be attributed to a softer sentiment, that of love, that the faculties of his youth were preserved, unweakened, amid the perils of a seducing capital. A lovely being, as if sent by Heaven as his guardian angel, enchained him, both by the charms of beauty and of soul. Korner's parents came to Vienna, approved and blessed the choice of their son, and rejoiced in the effects of a noble and inspiring sentiment.

Love and literary distinction had now fully crowned this favored youth; but his soul panted for more. Martial glory had ever been a slumbering passion in his romantic bosom; and the cry of his oppressed country kindling the feelings of patriotism he possessed to an enthusiastic degree, called out the sentiment in all its ardor; and after the battle of Asperia, which he celebrated in a martial ode, nothing could restrain him.

"Germany rises!" he wrote to his father: "the Prussian eagle by the beating of her mighty wings, awakes, in all true hearts the great hope of German freedom. My poetic art sighs for my country—let me not prove myself her unworthy son. Now that I know what happiness can ripen for me in this life—now that the star of fortune sheds on me its most cheering influence—now is this a sacred feeling which animates me?—this mighty conviction that no sacrifice can be too great for that greatest mortal blessing, our country's freedom! A great age requires great souls, and I feel, within thyself, the faculty of being as a rock amid this concussion of the nations. I must go forth—I must oppose my daring breast to the waves of the storm. Could I, think you, stand aloof, contented to celebrate with weak inspiration the success of my conquering brethren? I am aware that you will suffer much anxiety. —My mother too will weep—may God be her comfort!—I cannot spare you this trial. That I simply offer my life is of little import; but that I offer it, crowned as it is with all the flowery wreaths of love, of friendship and of joy,—that I cast away the sweet sensations which lived in the conviction that I have caused you no inquietude, no anguish,—this indeed is a sacrifice which can only be opposed to such a prize!"

There is nothing extant in any language to surpass the tenderness and heroism of this letter. Had it been lost by any accident, the brightest link in the dazzling chain of his life had been lost. It is from knowing not only the real worth of the offering which Korner made to his country, but the value which he himself put upon it, that we can appreciate his noble sacrifice to duty and patriotism. The following is a translation of his farewell address to his affianced bride:

Farewell, farewell!—with silent grief of heart
I breathe adieu, to follow duty now;
And if a silent tear unbidden start,
It will not, love, disgrace a soldier's brow.
Where'er I roam, should joy my path illume,
Or death entwine the garland of the tomb,
Thy lovely form shall float my path above,
And guide my soul to rapture and to love!

O hail and bless, sweet spirit of my life,
The ardent zeal that sets my soul on fire;
That bids me take a part in yonder strife,
And for the sword, awhile, forsake the lyre.
For, see thy minstrel's dreams were not all vain
Which he so oft hath hallow'd in his strain;
O see the patriot strife at length awake!
There let me fly, and all its toils partake.

The victor's glorious wreath shall bloom more bright
That's pluck'd amid the joys of love and song,
And my young spirit hails with pure delight
The hope fulfill'd which it hath cherish'd long.
Let me but struggle for my country's good,
E'en though I shed for her my warm life blood,
And now one kiss—e'en though the last it prove—
For there can be no death for our true love.

Theodore Korner left Vienna on the 15th March, 1813, and arrived at Breslau just as Major Lutzow was forming the free corps which afterwards became so much distinguished under his name. The recommendations Korner had brought from Vienna to the most influential persons in the army, procured him a cordial reception in this gallant band; and entering as a private trooper, he so devoted himself to the service that he was soon elected a lieutenant by his comrades. Lutzow's free corps were solemnly consecrated in the village church of Zobten, a choral hymn written by Korner being sung upon the occasion, and the clergyman administering to each member an oath to die for his country—"a consecration to death," as Korner calls it, which sunk deeply into his poetic mind, and perhaps suggested that forboding of his early fate which prompted some of his noblest verses, and sent him into battle with the stern zeal of one doomed of Heaven. The life of a partisan officer must have been Elysium to the adventurous and romantic spirit of Korner, as he and his bold comrades, like "Marion and his men," or, to go nearer home, like Schiller's band of robbers, would sally from the forest upon his country's invaders, and, by the music of his own war-hymns, charge upon the astonished foe. They who witnessed the effect produced by the German minstrels here in singing the following fine battle-song of Korner, can imagine how, in scouring the country, it must have rung from the throats of a thousand troopers:

Lutzow's Wild Chase.

What is it that beams in the bright sunshine,
And echoes yet nearer and nearer?
And see! how it spreads in a long dark line,
And hark! how its horns in the distance combine
To impress with affright the hearer!
And ask ye what means the daring race?
This is—Lutzow's wild and desperate chase!

See, they leave the dark wood in silence all,
And from hill to hill are seen flying:
In ambush they'll lie till the deep nightfall,
Then ye'll hear the hurrah! and the rifle ball!
And the foe will be falling and dying!
And ask ye what means their daring race?
This is—Lutzow's wild and desperate chase!

Where the vine boughs twine, the Rhine waves [illegible]
And the foe thinks its waters shall hide him;

But see, they fearless approach the shore,
And they leap in the stream, and swim proudly o'er,
And stand on the bank beside him!
And ask ye what means the daring race?
This is—Lutzow's wild and desperate chase!

Why roars in the valley the raging fight,
Where swords clash red and gory?
O fierce is the strife of that deadly fight,
For the spark of young Freedom is newly alight,
And it breaks into flames of glory!
And ask ye what means the daring race?
This is—Lutzow's wild and desperate chase!

See yon warrior who lies on a gory spot,
From life compelled to sever;
Yet he never is heard to lament his lot,
And his soul at its parting shall tremble not,
Since his country is saved forever!
And if ye will ask at the end of his race,
Still 'tis—Lutzow's wild and desperate chase!

The wild chase, and the German chase
Against tyranny and oppression!
Therefore weep not, loved friends, at this last embrace,
For freedom has dawn'd on our lov'd birth-place,
And our death shall ensure its possession!
And 'twill ever be said from race to race,
This was—Lutzow's wild and desperate chase!

The hand that traced these spirit-stirring lines, was also a complete master of the sword; and while painting, music, and dancing, in each of which he excelled, had not been neglected in Korner's education, he was also thoroughly skilled in horsemanship, a capital swimmer, and much practised in rifle-shooting. Such a soldier, with animal spirits that never tired, must have been the life of the corps of which he was a member, and, indeed, he was appreciated accordingly, as his commander made him adjutant to the regiment, for the express purpose of having one so valued near his own person. The promotion nearly cost him his life, as the following account by his biographer, of the peril encountered by that portion of the regiment to which Korner thus became attached, and which, separated from the rest, upon particular duty, fully shows:

The gallant troop acquired considerable renown, and harassed the enemy much, especially by cutting off his communications. A plan was in consequence laid by the French Emperor for the extirpation of the corps, that, as a deterring example, no man should be left alive. The armistice, concluded at this momement, afforded an opportunity for putting it in practice. (The Duke of Padua, it is observable, particularly profitted by this armistice; for being shut up in Leipzing by generals Woronzow and Czernichef, with the co-operation of two battallions of the Lutzow infantry, he was only saved by this cessation of hostilities.)

Major von Lutzow had received official information of the armistice at Plauen. With out expecting to meet with any opposition, he chose the shortest route to rejoin the Infantry of his corps, having received the most confidental assurances of safety from the enemy's commanding officers, and proceeded along the high road, without interruption, to Kitzen, a village in the neighborhood of Leipzig; but hear he found himself surrounded and menaced by a very superior force. Theodore Korner was despatched to demand an explanation, but' instead of replying, the commander of the enemy struck him with his sword; and it being now twilight, a general attack was made on the three squadrons of the Lutzow cavalry before they had drawn a sabre. Several were wounded and taken, and others dispersed in the surrounding country; but Major von Lutzow himself was saved by the assistance of a squadron of Uhlans, who being in advance with the Cossacks, formed the vanguard, and consequently were not assailed at the same moment. He reached with a considerable body of his troops, the right bank of the Elbe, where the infantry of his corps and a squadron of its cavalry were already collected.

Kornor received the first blow, which he was not prepaired to parry, as he approached close to the enemy's commanding officer to deliver his message without drawing his sabre, and was thus severely wounded in the head: the second blow only inflicted a slight injury. He fell back, but speedily recovered himself, and his spirited steed bore him in safety to a neighboring wood. He was here occupied, at the first moment, with the asststance of a comrade, in binding up his wounds, when he perceived a troop of the enemy, who were in pursuit, riding towards him. His presence of mind did not forsake him, but turning towards the woods he called with a loud voice, "Fourth squadron,—Advance!"—His stratagem suceeeded—the enemy were appalled, drew back, and thus afforded him time to conceal himself deeper in the wood. It had now become dark, and he found a place in the thicket where he could remain undiscovered.

The pain of the deeper wound became very severe, his strength was exhausted, and his last hope was gone. It was in this extremity that he composed the beautiful sonnet, of which the following is a translation:

Farewell to Life.

Written in the night of the 17th and 18th of June, as I lay, severely wounded and helpless in a wood, expecting to die.

My deep wound burns;—my pale lips quake in death,—
I feel my fainting heart resign its strength,
And reaching now the limit of my life,
Lord, to thy will I yield my parting breath.

Yet many a dream hath charmed my youthful eye:
And must life's fairy visions all depart?
Oh surely no, for all that fired my heart
To rapture here, shall live with me on high.

And that fair form that won my earliest vow,
That my young spirit prized all else above,
And now adored as freedom, now as love,
Stands in seraphic guise, before me now;

And as my fading senses fade away,
It beckons me, on high, to realms of endless day.

This beautiful requiem was not, however, the last verses Korner was destined to write. His bleeding and senseless body was found by some peasants, and after being partially restored by their kindness, he was removed to Carlsbad; and, recovering from his wounds in a few months, he hastened back to his companions in arms, to meet the glorious fate which his prophetic soul had always whispered should crown his fortunate career. We give the account of his last moments without abridgment.

"Major von Lutzow had determined on conducting, in person, a part of the cavalry of his corps in an attack on the enemy's rear, which was to take place on the 28th of August. Towards evening they arrived at a place of refreshment provided for the French; the troops made use of it, and after two hours rest continued their march to a wood near Rosenberg. Here they concealed themselves while waiting the return of a scout, who was to bring them intelligence of the readiest way to a camp of the enemy which was badly guarded, at the distance of a couple German miles (stunden). In the mean time some Cossacks, who were placed on the look-out on a neighboring eminence, perceived a transport of ammunition and provisions, escorted by two companies of infantry. It was immediately determined to attack them, and the enterprise proved perfectly successful. Major von Lutzow ordered the Cossacks (about one hundred horse) to head the attack, and took half a squadron to fall on the flank of the enemy, leaving the remaining half where they were, in order to cover the rear. He himself led the assault made on the flank, and Korner acted as adjutant by his side. An hour previous to this, and during the rest in the wood, Korner produced his last poem, "The Sword Song." He had written it in his pocket-book in the dawn of the 26th of August, and was actually engaged in reading it to a friend when the signal for the attack was made.

On the high road from Gadebush to Schwerin, close to the wood which is situated about half a mile (halbe-stund) from Rosenberg, the action took place. The enemy were more numerous than had been supposed, but after a short resistance they fled, not having been cut off in sufficient time by the Cossacks, across a small plain to the neighboring grove of underwood. Among those who pursued them most boldly was Korner; and here it was he met with that glorious death which he had so often anticipated, and celebrated with so much enthusiasm in his poems!

The tirailleurs, who had quickly found a rallying point in the low wood, sent, from thence, on the pursuing cavalry a shower of balls. One of these struck Korner in the abdomen, after having passed through his horse's neck; it wounded the liver and spine, and deprived him of speech and consciousness. His countenance remained unchanged, and evinced no trace of any sensation of pain. Nothing was neglected that could tend to save him; his friends immediately raised him up; and of the two who hastened to assist him, through the continued fire on this point, one followed him about half a year after, who may be placed among the most noble and accomplished youths who were inspired, and who have inspired others, in the sacred cause—the noble Frieseǹ. Korner was carefully carried to a neighbouring wood, and was delivered to the care of a skilful surgeon, but all human help was vain!

The action, which, after this loss, so universally regretted, took a very sharp direction, was speedily brought to a conclusion. The Lutzow cavalry pressed forward, like enraged lions, into the underwood, and all who could not escape were shot, sabred, or taken. The small but dear sacrifice of this day, which consisted, beside Korner, of Count Hardenberg, a very promising and interesting young man, and a Lutzow yager, required now a worthy burial. The remains of the three valiant fallen soldiers were placed upon a carriage, and conducted in the van with the prisoners, and with the transport that was captured. The French troops, who had hastened forward, did not venture immediately to follow the train, as they occupied much time in scouring the wood, in which they suspected that troops were lying in ambush.

Korner was interred under an oak, near a mile-stone on the road from Lubelow to Dreikrug, near the village of Wobbolin, which is about a mile from Ludwigslust. He was buried with all the honours of war, and with all the marks of esteem and love of his deeply-affected brethren in arms.

Among those friends who covered his tomb with turf, there was one named von Barenhorst, a noble and accomplished youth, who found it impossible to survive such a death; and a few days after, being placed on a dangerous post in the battle of Goehrde, he threw himself on the enemy with these words: "Korner, I follow thee; (Korner Ich folge dir;") and fell, pierced with many balls!

The *sister* of Korner died shortly after of a broken heart for the loss of her brother, and was buried in the same grave.

Thus when it had only shone for two and twenty summers, went out the light of one of the noblest souls that ever moved in the ranks of war;—thus was quenched one of the most glorious spirits that ever gave its breath to song. For scarcely since the young king of Israel led the anthems of triumph over the mockers of his country's God, subdued by his boyish arm, has the world witnessed the combination of early genius and chivalric heroism that met in Carl Theodore Korner. *

SUMMARY.

Madrid, May 28.—With profound grief we announce to our readers the death of Mr. Charles S. Walsh, Secretary of Legation of the United States at this Court. This gentleman had been some time ill; till at length, having exhausted all the resources of medical science, he determined to try the effects of a change of air. Accordingly he left town, accompanied by his physician and a faithful attendant, in order to proceed to Valencia; but his sickness overcame him on the way, and he was obliged to stop at Quintanar de la Orden, where he fell a victim to the violence of a confirmed consumption. What makes the affliction more grievious, is the fact that he was cut off in the bloom of life, being not more than 32 years of age, and in the midst of a distinguished career.

The deputy of the Minister of the United States, who arrived at Quintanar soon after the death of Mr. Walah, made arrangements for the celebration of funeral honors, with all the respect and decorum which time and circumstances would permit. There was no want of co-operation on the part of the authorities, civil and ecclesiastical; and he was interred (conformably to the intentions of said Minister) with all the honors due to his rank. Under this sad bereavement it may serve to console the family of this gentleman, to know that nothing has been omitted to prolong his life; that he was surrounded with all the aids which science and friendship could dictate, and that he died *recognized by the Church as a Christian Catholic.*

A few days since, as the President of the Ithaca and Owego Rail Road, in company with John Randel, Jr., the engineer in chief, and an assistant engineer, were traversing a part of the road, a thunder shower come on. The former person took refuge from the storm, in a shop, while the engineer and his assistant went on further, and sheltered themselves in a barn. While these persons were there, a flash of lightning struck the barn, knocked down the two gentlemen last mentioned, and killed a man and horse standing very close at their side.—[Albany D. Adv.]

[*From the Montreal Gazette*, 13*th inst.*]

The Honorable Mr. Cass, Secretary of War of the U. States, accompanied by the Honorable Isaac Hill, U. S. Senator for the State of New Hampshire, and Lieut. Prentiss, of the U. S. Army, returned from Quebec yesterday in the St. George steamer, took up their residence at the Exchange Coffee House, and proceeded this morning by the Upper Canada Stages on their way to the Falls of Niagara, &c. It is to be regretted that the short stay made by the Secretary of War, as well as the strict privacy which he maintained both here and at Quebec, should have prevented his receiving the attentions of (which he seemed so studiously to avoid) the citizens of both places would have felt happy in bestowing upon this distinguished ornament of the present American Cobinet.

Large Guns.—The largest guns ever fired are the Turkish cannon at the Dardanelles, the diameter of which is two feet three inches, and a stone shot from which struck the Windsor Castle, of 98 guns, and cut her mainmast almost in two, and nearly knocked her two decks into one. Our young midshipmen used to crawl into these guns on their hands and knees. A gun almost as large was found at Algiers. But the largest shot of any sort ever fired by Europeans, was that from the new mortar used by the French at Antwerp. This shell was two feet in diameter, and weighed when empty, 916 lbs. It contained 99 lbs of powder, and its total weight was consequently 1,015 lbs.—The mortar from which it was discharged, weighed 3,700 lbs. and the gunpowder to load it was 30lbs.—This was really prodigious. We must add, that at the Dardanelles, one of the great Turkish shot struck the bows of that magnificent ship the Royal George, and wonderful to relate, that one shot alone nearly sunk her. According to the Baron de Tot, the weight of the Turkish shot was 1,000 lbs, and the charge of gun powder 330 lbs.—[London pa.]

College of Physicians.—The fifth public assembly took place on Monday evening. The literary attraction of the evening was an elegant paper, from the pen of Sir Henry Halford, and read by himself, "On the deaths of certain eminent persons of antiquity," from which the audience were given to understand that Sylla, the Dictator, died of an abscess; Flaccus of pleurisy: and Pomponius Atticus, of dysentery, after having left off food and physic. The paper went into an interesting and amusing parallel between the poisoning of Britannicus by Nero, and that of Sir Theodosius Boughton by Donellan, in our own country, about half a century ago, both deaths having been produced by laurel water; and, in conclusion, the last 10 days of Alexander were described with as much minuteness as if the Macedonian hero had been a patient ot the favourite physician of George the Fourth.

The President has recognized Charles Augustus Heckscher as Consul of the Duke of Mecklenburg Schwerin. Also, George Follin as Vice-Consul of Mexico for the port of Philadelphia.

Department of State, July 8.—Information has been received from our Consul, George Moore, Esq. at Trieste, that a Light House has been erected on the extremity of the Teresian Mole, which forms the southwestern side of the harbor of the city. The light is elevated about one hundred and thirty feet above the water, and may be seen from the deck of a vessel at the distance of thirteen miles. In order to distinguish it from all others on the coast, the light is made to intermit, so as to appear for half a minute, then disappear for the same length of time alternately.

Navy Department, July 8.—The fleet Surgeon in the Mediterranean, under date of April 4, on board the frigate United States, writes:

But one death from sickness has occurred in the squadron for three months, which was on board this ship, being the first victim of disease since leaving America.

No death has occurred in either the Constellation or the John Adams during the last three months.

Industry.—Man must have occupation or be miserable. Toil is the price of sleep and appetite, of health and enjoyement. The very necessity which overcomes our natural sloth is a blessing. The whole world does not contain a priar or a thorn which divine mercy could have spread. We are happier with the sterility, which we can overcome by industry, then we could have been with spontaneous plenty and undounded profusion. The body and the mind are improved by the toil that fatigues them.—The toil is a thousand times rewarded by the pleasure which it betows. Its enjoyments are peculiar.—No wealth can purchase them, no indolence can taste them. They flow from the exeriions which they repay.

Destructive Fire.—A correspondent at Watertown, Jefferson county, announces the following unwelcome intelligence.

"We have this morning added to the list of our heavy calamities by fire and flood, the loss of the large cotton factory of Messrs. L. Beebee & Co. It was discovered to be on fire about 11 o'clock this morning, (Sunday, 7th July,) and so rapid was the progress of the destroying element, that in less than an hour, the entire pile of buildings was a heap of ruins. But very little of the property which the building contained was saved. Raw cotton, manufactured goods, and the extensive and valuable machinery, all went together. The loss is from 150 to 200,000 dollars.

This factory was one of the most perfect and extensive in the state. It was built of stone, five stories high, and of great value, aside from the large capital invested in it.

In addition to the above, the Jefferson Reporter, extra, of the 7th inst. states, that the fire was supposed to have been caused by spontaneous combustion, and that but $25,000 was insured.—[Albany Argus.]

A copper mine has recently been discovered near Honesdale, Pa. which is likely to prove an extensive and permanent source of wealth to the owner. The ore is said to be of excellent quality. A mine of iron ore has recently been found in Sandy Creek township, Mercer county, in a neighborhood possessing great advantages in timber and water power.

India Rubber Table Cloths.—We have recently seen, and have in our possession, a sample of a new and superior kind of covers for tables and stands. They are manufactured by Samuel Steele & Co, Woodbury, Ct. They are conposed of cotton, with a composition of India rubber, &c. varnished and bronzed in an elegant manner. They cost but little more than the common oil cloth, and are much superior both for beauty and durability. One very important quality which they possess over any oil covers, is their elasticity, as they can be doubled in every possible manner, without breaking or injuring the composition of which they are made.—[Danbury Her.]

Dr. Scudder, of this city, has invented a torpedo, with which he is determined to destroy the Sea Serpent. He has secured a patent for his invention, and intends to start for Nahant this morning. The same weapon, the Doctor thinks, will be useful to whalemen, and others who are in pursuit of large fish.—[Gazette.]

Patriotism of the Clergy during the Revolutionary War.—Two minister's sons, in the County of Essex, whose fathers were out in the great struggle for American liberty and independence, met not long since. After talking over some of the events of that period, one says to the other, "I believe my father did more than any other minister in the State."—"How so?" says the other, "what did he do?"—"Why, he sent three sons into the field." The other replied, "My father did more; he went himself, and took four with him."—[Salem Gaz.]

The Sea Serpent seems to have a great predilection for the fashionable watering-places. After making Nahant his place of summer resort for the last few years, it appears by a correspondent of the Journal of Commerce of this morning, that he has lately been whisking his tail in the surf of Long Branch; and it is said, that among the attractions of the new Hotel now "in erection" at Rockaway, is to be a curiously contrived verandah towards the sea, for the especial purpose of watching the gambols of his snakeship. Having brought his family with him upon this visit, the amiable traveller may be expected to remain for some time, and give us all more or less an opportunity of cultivating their interesting acquaintance. Should one of the animals be caught alive,—as we see no reason why they should not, as the row-boat, which was within twenty feet of the largest, might, with some adroitness, have thrown a coil of rope over his head, and let the steamboat at hand tow him ashore,—he might be lodged to advantage in the Corporation Reservoir, at the head of Broadway; or kept, if unruly, in the admirable Eel-case which Mr. Holt has provided for such attenuated figures, when needing a straight jacket. In the mean time, as the Soë Ormen, as the Norwegians call it, is likely to succeed Black Hawk as the lion of the day, it may be well to take a retrospective glance at his biography, which is thus given in the Boston Mercantile Journal, edited by Mr. Thatcher, of some literary celebrity:

The earliest account of an animal of this general description is furnished by Pantoppidou, Bishop of Bergen in Norway, and author of an old Natural History, in the first editions of which is a picture of the serpent. This gives him a *mane*—an appearance doubtless caused by his rapid motion through the water.—He says, it lay on the water, when it was calm; and when it moved, parts of the back were to be seen in the line of the head. The color was dark brown, variegated with light spots or streaks. The animal appeared regularly many years off the Manor of Nordland, in *July and August*, where all the inhabitants were familiarly acquainted with him, though the Bishop doubted the whole story for a long time. He represents the length to have been 600 feet, and the size that of two hogsheads!—a statement which furnishes rather curious food for discussion. It was at least an immense exaggeration of the ignorant peasants and fishermen.

The Bishop also cites a letter, dated 1751, from a Captain in the Sweedish Navy, De Ferry, relating to a snake seen by him near Molne, on a calm hot day in August, 1746. He fired at it, on which it immediately sunk. Observing the water to be red, he supposed he had wounded it. The head, he relates, was like that of a horse—and of a grayish color—the mouth was quite black and very large. He also mentions the bright mane. The eyes were black, and there were seven or eight thick folds, about six feet distance from one another. This letter was sworn to before the Bergen magistrates.

In 1804, Allen Bradford, Esq. then of Maine, addressed a letter to J. Q. Adams, then Secretary of the American Academy, transmitting documents to show that a large sea-serpent had been seen in and about Penobscot Bay. The Academy laid them aside, and they first appeared in Silliman's Journal, in 1820. One was a letter from the Rev. Mr. Cummings of Sullivan, Maine, dated August 1803; and another was dated August, 1804. The animal was seen by Mr. Cummings, his wife, daughter, and another lady, as they were on their passage to Belfast, between Cape Rosoi and Long Island. It was in the month of July; the sea was calm; there was very little wind; and the first appearance of the Serpent was near Long Island. Mr. C. supposed it to be a large shoal of fish, with a seal at one end of it; but he wondered *the seal should rise out of the water so much higher than usual;* as he drew near, they discovered the whole appearance to be one animal in the form of a Serpent. *He had not the horizontal, but an ascending and descending serpentine motion.* This account also refers to the description given by other persons of similar animals.

A letter of March, 1781, from Capt. Little, of our Navy, to Mr. Bradford, states that in May, 1780, as he was lying in Broad Bay (Penobscot,) in a public armed ship, he discovered at sunrise, a large Serpent, coming down the bay on the surface of the water.—The cutter was manned and armed; he went himself in the boat; and when within 100 feet of the Serpent, the marines were ordered to fire on him; but before they could make ready, he plunged into the water.—He was not less than 45 to 50 feet long; the largest diameter of his body was supposed to be 15 inches; and his head, nearly the size of that of a man, he carried four or five feet out of water. He wore every appearance of a Black Snake. He was afterwards pursued, but they never came nearer to him than a quarter of a mile. A Mr. Joseph Kent, of Marshfield, says Capt. Little, saw a like animal at the same place in the year 1751, which was longer and larger than the main boom of his sloop, of 85 tons. He observed him within ten or twelve yards of his vessel.

The declaration of Eleazar Crabtree is then given, who lived at Fox Island, in the Bay of Penobscot, in the year 1777 and 1773. He has frequently heard of a sea-monster frequenting the waters near the shore; and doubting the fact, he went down one day upon receiving information from a neighbor, that he was then in the sea near his house. He saw a large animal in the form of a Snake, iying almost motionless in the water, about 500 feet from the bank where he stood. His head was about four feet above the surface; he appeared a hundred feet long; and he supposed him to be three feet in diameter. Many other inhabitants, upon whose veracity he could depend, had also declared to him that at other times they had seen such an animal.

After some other and equally strong testimony added to the above, we come down to the year 1815, when one of these monsters was seen off Plymouth, in the month of June, by several reputable witnesses; and from that time to the present his continued visits to the eastern coast have been witnessed by so many persons of high respectability, and testified to upon oath publicly administered, that though the *Horse Mackerel* taken by the Boston party cruizing for the Sea Serpent, brought his existence for a while into discredit, no reasonable person can now pretend to doubt it. Those wishing for further details on the subject, are referred to Gray & Bowen's edition of Buffon.

So powerful is that magnet still
Which draws all souls and senses to her."

This ancient is afterwards kept in countenance by a paraphrase of a modern Barlæus, a staunch Calvanist:—

"Now, perhaps, having taxed my poetical art,
To indite you this erudite letter,
You've enough of the sex, after all, in your heart
To like a few kisses much better.

"And in sooth, my dear Anne, if you're pretty as wise,
I might offer the gifts you prefer,
But that Barbara tells me with love in her eyes
I must keep all my kisses for her."

MARRIAGES.

July 9, at the Episcopal Church in Buffalo, by the Rev. Mr. Shelton, the Hon. Robert McPherson, to Miss Harriet Thompson, both of Black Rock.

In the Parish of Lapide, La. on the 2d of June, Capt. Richard Delafield, of the U. S. Corps of Engineers, to Miss Harriet Covington.

At East Bloomfield, on the 4th inst. by the Rev. Mr. Smith, Lieut. E. B. Birdsall, of the United States Army, to Miss Mary Wilcox, daughter of Doctor Wilcox, of the former place.

In Philadelphia, on the 3d inst. by the Rev. Dr. Bedell, Lieu. N. SAYRE HARRIS, U S. A. to ELIZABETH CALLENDER, daughter of J. Andrews, Esq.

DEATHS.

On Sunday forenoon, 14th instant, after a protracted illness, MEINHARD KOLSTER, Esq. a native of Hamburg, Germany, and partner of the house of Faerber & Kolster, of the city of Mexico.

At New Orleans, June 26, of the prevailing epidemic, WM. V. CHARDAVOYNE, formerly of this city, aged 33 years.

At Petersburg, Va. on the 8th inst., Francis G. Yancey, Esq. senior editor of the Petersburg Intelligencer.

NORTH-WESTERN RAILROAD.

☞ NOTICE—Books for subscriptions to the additional stock of "The Elizabethtown and Somerville Railroad Company," will be opened at William Craig's Inn, in Belvidere, on Monday the 29th day of July instant; at Israel Smith's, in Clinton, on the 30th; at Drake's Hotel. In Newark, on the 31st; and at the Exchange, in the City of New-York, on the 1st 2d, and 3d days of August next, between 11 A. M. and 3 o'clock, P. M Additional stock required $300 000, in shares of $50 each—$5 on each share to be paid at the time of subscribing.

GARRET D. WALL,
THOMAS SALTER,
OLIVER W. OGDEN,
NATHANIEL SAXTON,
JOHN W. BRAY,
JOHN KINNEY, Jun.

Dated July 12, 1833.

BOOKS will also be opened at the same times and places for subscriptions to the stock of "The Susquehanna and Delaware Railroad Company." Capital required, $1,0 0,000—Shares $ 0each—$5 on each share to be paid at the time of subscribing.

HENRY W. DRINKER,
DANIEL STROUD,
WILLIAM HENRY,
JOHN COOLBAUGH,
A. E. BROWN,
STOGDEL STOKES,
DAVID SCOTT,
JAMES M. PORTER.

Dated July 10, 1833.

BOOKS will likewise be opened at the same times and places, for subscriptions to the stock of "The Legget's Gap Railroad Company." Capital required, $300.000—Shares $50 each—$5 to be paid at the time of subscribing.

HENRY W. DRINKER, and others,
Commissioners.

Dated July 10, 1833.

The above roads, the stock of which is now offered to the public in connexion with the New Jersey Railroad, form one continuous line of railroad communication from Jersey City, opposite New-York, through the Lackawana Coal Region, to the North-east Branch of the Susquehanna, below the great bend, and the North Branch of the Susquehanna at Pittstown, at the mouth of the Lackawana creek, and head of the Pennsylvania Canal navigation.

The "New-Jersey Railroad" extends from Jersey City, through Newark and Elizabethtown, and New-Brunswick The "Elizabethtown and Somerville Railroad" extends from Elizabethtown, through Somerville, Clinton, and Mansfield, to Belvidere, on the Delaware. The "Susquehanna and Delaware Railroad" extends from Belvidere through the Delaware Water-Gap, Shroudsburgh, up the Pokono Brook, down Roaring Brook, to its junction with the Lackawana at Centreville, and down the Lackawana to Pittstown, on the North Branch of the Susquehanna. The "Legget's-Gap Railroad" extends from Centreville, where the Delaware and Susquehanna Railroad enters the Lackawana Valley, through Legget's-Gap across the South Branch of Tunkhannock to the mouth of Martin's Creek, up Martin's Creek to the head waters of Salt-lick Creek, and down Salt-lick Creek to the North-East Branch of the Susquehanna, below the great bend.

By this line of Railroad, in addition to the advantage of an open communication at all seasons of the year, the inexhaustible coal deposits of the Lackawana are between 60 and 100 miles nearer the city of New-York than by any other route of artificial communication now contemplated or believed to be practicable. This is apparent on inspection of the maps of New-Jersey, Pennsylvania, and the large map of New-York: and comparison of this with other lines of communication. jy23—3t

TO DIRECTORS OF RAILWAY COMPANIES AND OTHER WORKS.

☞ An Engineer lately from England, where he has been employed in the location and execution of the principal railways in that country, wishes to engage with some company in the United States.

From his practical knowledge of the various kinds of motive power, both of stationary and locomotive engines, also the construction of railway carriages of many descriptions, he has no doubt that he would prove of efficient service to any company having works now in progress.

Letters addressed to W. E. G. 35 Wall street, or to the care of Wm. & F. Jacques, 90 South street, will be punctually attended to. Most satisfactory reference can be given. m11tf

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

☞ **GRACIE, PRIME & CO.,** offer for sale, at 22 Broad street—

2 cases Gum Arabic }
20 do. Danish Smalts, EFFF }
10 do. Saxon do. do. } Reduced Duty
100 bags Saltpetre }
2 do. Gall Nuts; 20 tons Old Lead
100 do. Trieste Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do. Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
30 do. Molieres Almonds
143 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
15 do. 5-8 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
4 do. White Quiltings
10 do. Borrie's Patent Thread, No. 22 and 25
10 do. Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
25 bales low priced plain Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—21x35, 21½x36, 21x34½, 23x36, 26x37, 29x41, 27x39½, 21x33, 21x20, 24x23, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.

5 cases each 1600 Sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
3 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do do do Red do Gold do
2 do do do White do Silver do. A20

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Germant. and Norrist. Railroad

m1 1y

NOVELTY WORKS,
Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

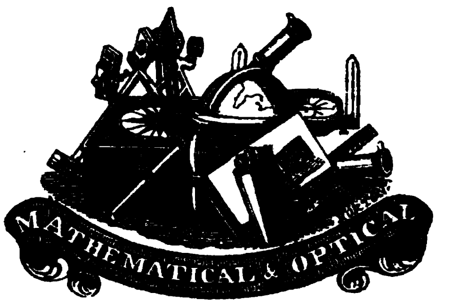
☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co, Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F21 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

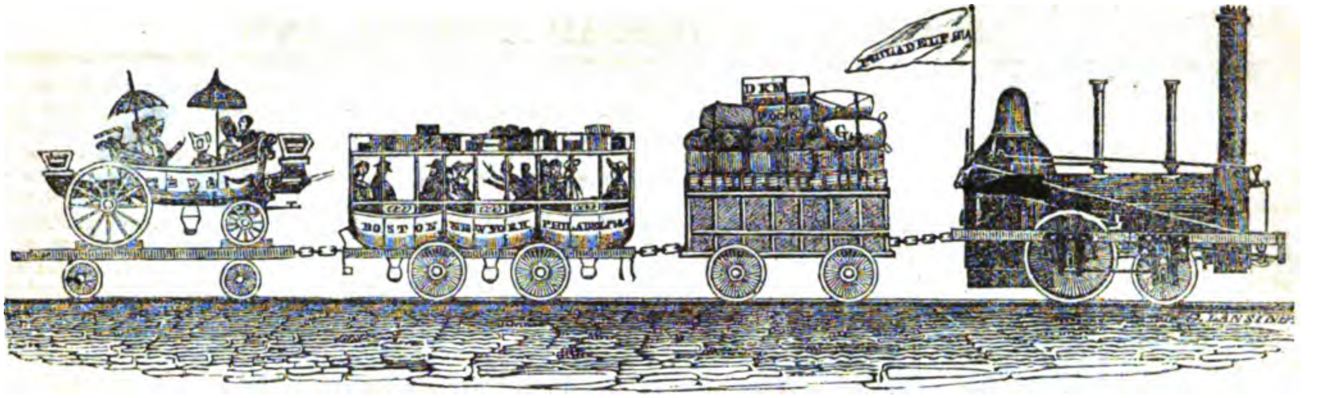
WILLIAM HOWARD. U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m25



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AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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D. K. MINOR, Editor.] SATURDAY, JULY 27, 1833. [VOLUME II.—No. 30.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JULY 27, 1833.

It may not be uninteresting to those of our friends who were so obliging as to furnish us with reports and other documents relative to the numerous railroads now in use, or in a course of construction, as well as those in contemplation, to learn that they have been received by the eminent gentleman in whose behalf we applied for them; nor will they be less gratified to know that we shall soon have the pleasure of laying before them the article on *Roads* and *Railroads*, prepared for the "Encyclopædia Metropolitana," by one of the most distinguished engineers of Europe, as they will learn by the following letter recently received from Liverpool.

Liverpool, June 7, 1833.

To the Editor of the Am. Railroad Journal:

Dear Sir,—I have to acknowledge the receipt of two copies of the first volume of your valuable and interesting publication; and one copy of the first nineteen numbers of the second volume, and shall expect in due course the duplicate numbers, and the others in progress of publication.

I am much gratified by your compliance with my request, and will in return furnish you with proofs of the article, *Road and Railroad*, when put in type, which will now be in the course of a few weeks, though I shall delay the printing as long as possible, that I may get the very latest information on the subject of the American Railways, &c.

I have also received the Reports, &c. upon the several principal Railroads enclosed in your packet, and I will take the earliest opportunity of reciprocating your politeness by sending you what I can on the subject of our public works in England.

Allow me to say, that any friend of yours coming to England with letters from you to me, shall meet every attention. I am engaged on most of the principal Railroads of this country and Ireland, and will be glad to afford any American engineer the information he may require.

I have the honor to be, dear sir, yours, with much esteem,
Charles Vignoles,
Civil Engineer.

There are still several Railroads, relative to which we have received no account. We should be greatly obliged by such information from the engineers, or other officers of the companies, as will enable us to furnish Mr. Vignoles in time for his forthcoming publication. He desires, also, where it is convenient, a transverse and longitudinal section of the road.

We shall forward by the packet of the 1st of August such Reports, &c. as may have come to hand since the others were sent.

Our desire to obtain further information relative to the various roads from which we have not heard, will be, we trust, sufficient apology for publishing the above letter.

New-York and Erie Railroad.—The books for subscription to the stock of the New-York and Erie Railroad were opened in New-York week before last, and the requisite quantity of stock to commence the work was taken up. This road is to extend from the Jersey shore near New-York, touch a section of Pennsylvania, and run through the southern tier of counties of this State to Lake Erie. It will be a great thoroughfare for the transportation of produce, &c. from the west to New-York. It would seem like a Herculean undertaking to construct it, but the stock being taken, it will doubtless soon be commenced, and completed at no very distant day.

The above extract is from the Poughkeepsie Telegraph. The editor is, however, mistaken in saying that the New-York and Erie Railroad is to extend from the "Jersey shore near New-York, touch a section of Pennsylvania," &c. as the charter for this road expressly requires that it shall pass the entire distance in the State of New-York, as will be seen by the following extract from the charter:

Sec. 12. The said corporation shall not, at any point, connect the said single, double, or treble Railroad or ways, with any Railroad, either of the State of Pennsylvania or New-Jersey, or leading into either of the said States, without the consent of the Legislature of this State, on pain of forfeiting the powers and privileges conferred by this act.

New-York and Albany Railroad.—By an advertisement in our paper for four weeks previous to the 17th instant, notice was given that books for subscription to the stock of the New-York and Albany Railroad Company would be opened in the cities of New-York, Albany, and Troy, for three days, ending on the 17th, and also at Payn's tavern, in the town of Amenia, in this county. Since the 17th we have inquired of several persons from the country whether any subscriptions have been made at Amenia, without receiving any definite information. Neither the New-York, Albany, or Troy papers have stated the amount subscribed in those cities. We, therefore, conclude that the books were opened without success, or if any subscriptions were made, the amount was so small that the city papers have not deemed it worth while to mention it.—[Poughkeepsie Telegraph.]

We learn, upon inquiry, that the stock for the road above referred to was not taken at the late opening of the books: it is believed, however, that it will be taken without much delay.

Cuvier.—It has been justly deemed one of the greatest advances in science, that the naturalist can now, on the discovery of a fossil tooth, merely by the examination of that seemingly unimportant relic, pronounce with certainty on the nature of the animal to which it belonged, the distinguishing features of its structure, and even the prominent characteristics of its nature and habits. That this has been done, and that too with animals which, like the mammoth and the mastodon, have long disappeared from the face of the earth—that we have been enabled to form in part a natural history of the world before the creation of man—we owe chiefly to Cuvier. The discovery of a few bones, which to our ancestors would merely have seemed testimonies of the reality of the existence of giants in the "good old days of Palmerin of England," and "Amadis of Gaul," has led in our times to an extension of the authentic history of nature, which we could hardly blame those who lived fifty or sixty years ago for regarding as wholly impossible.—[From an excellent Memoir of Cuvier in the Literary Guardian.]

Normh Carolina.—The following, from the Raleigh (N. C.) Register, is indeed reviving. It shows that, notwithstanding the recent failure of the *Central Railroad* enterprize, North Carolina does not mean to let the subject rest. There will be found in the following list the names of some of North Carolina's most eminent sons, and it is much to be desired that the present effort may be crowned with better success than those which have preceded it.

Internal Improvement Convention.—In conformity to the invitation previously given through the public papers, a large number of Delegates from various parts of the State, assembled in Convention, in this city, on the recent Anniversary of American Independence, to take into consideration the subject of Internal Improvement, and to adopt such measures as might best promote its success. It may not, perhaps, be going too far, to say, that it was the most talented, respectable, and dignified body ever convened in North Carolina, for any purpose. Ample confirmation of the correctness of this assertion may be found in the list of the Delegates which we subjoin. It is, indeed, a truly gratifying and animating circumstance, to find that there is still so much of the spirit of State pride and patriotism among us, as to bring together, on such an occasion, and at so short a notice, so large a number of gentlemen, of different political views, to consult and cooperate for the public good. This fact alone proves conclusively that nothing is wanting to give an impetus to the cause of Internal Improvement in the State, but the general prevalence of a spirit of free inquiry into our resources and relative situation. To excite such a spirit was the great end and aim of the Convention, and no one who witnessed the zeal, nay, the enthusiasm which pervaded that body, can doubt that the design will be accomplished.

Having had the honor, however, to serve in the Convention, and desirous to create abroad no false impressions as to its character or deliberations, we prefer that the record of the proceedings should speak for itself. The Journal of the Convention, therefore, shall be given in detail to the public, in our next; but in the mean time, we think it our duty to subjoin a very brief account of the most prominent circumstances connected with it.

The Convention was organized at the Government House, on the afternoon of the 4th, by the appointment of his Excellency, David L. Swain, as President, and of Gen. S. F. Patterson, of Wilkes, and Charles Manly, Esq. of this city, as Secretaries. On taking the chair, the president made an appropriate address. The Counties having been called over alphabetically, the following Delegates, 118 in number, appeared and took their seats, viz.:

From Beaufort County—Z. W. Barrow.

Brunswick—F. J. Hill, Francis N. Waddell, J. Waddell, H. Y. Waddell.

Bladen—John Owen.

Craven—William Gaston, John H. Bryan, John F. Burgwin, Wright C. Stanly.

Chatham—Jona. Haralson, Abraham G. Kean, C. J. Williams, William H. Harden, P. Le Messurier, Charles Lutterloh, H. S. Clark, Thomas Prince.

Cumberland—Robert Strange, John Huske, L. D. Henry, John H. Hall, E. J. Hale, E. Arnold, E. W. Wilkings, James Seawell, W. Waddill, Jun., Thomas L. Hybart.

Duplin—William Wright.

Franklin—James Farrier, Wood T. Johnson, Nathaniel R. Tunstall.

Granville—William M. Sneed, Spencer O'Brien, Thomas W. Norman, Thomas B. Littlejohn, Memucah Hunt.

Halifax—Jos. J. Daniel, Edm. B. Freeman.

Johnston—J. H. Smith, Bythan Bryon, Josiah O. Watson, Daniel Boon, Christopher Christophers, Reuben T. Sanders, John C. Smith, James T. Leach, James Frilick.

Lenoir—Isaac Croom, Hardy B. Croom, Nathan B. Whitfield, and George Whitfield.

New-Hanover—William B. Meares, John D. Jones, Joseph A. Hill, Alexander MacRae, William J. Love, Thomas Hill, Patrick Usher, George H. McMillan.

Nash—Henry Blount, Stephen S. Sorsby, George Boddie, Jun.

Orange—Hugh Waddell, William J. Bingham, Professor Philips, Walter A. Norwood, Alexander Henderson, James H. Norwood, Frederick Nash, William A. Graham, John Scott, Samuel Childs, Cadwallader Jones, William F. Strudwick, James Mebane.

Sampson—Thomas J. Faison, H. C. Holmes, William Kirby, Ollen Mobley, Wm. Faison.

Wilkes—Samuel F. Patterson.

Wake—David L. Swain, George E. Badger, James Iredell, William McPheeters, William H. Haywood, Jun., William Boylan, Henry Seawell, George W. Haywood, Charles Manly, A. J. Lawrence, J. C. Stedman, Thomas Cobbs, Weston R. Gales, James Grant, Cyrus Whitaker, Johnston Busbee, Alfred Jones, Henry A. Donaldson, Henry Warren, Turner Pullen, John Y. Young.

Warren—John C. Green, Thomas Bragg, George Little, Joseph S. Jones, George M. Allen, Simmons Southerland, James Somerville.

Wayne—Arnold Borden, James B. Whitfield, John W. Sasser, H. M. Jeter, John Wright.

A Committee, composed of one member from each Delegation, was appointed, to whom were referred all matters of inquiry, with instructions to make a general report. This Committee made a detailed report on Friday afternoon, which elicited a most able, animated, and protracted discussion. After being modified in several particulars, it was adopted by a vote of 55 to 37, on Saturday afternoon about 4 o'clock. Nearly the whole of the debate which occurred in the Convention took place on a resolution reported by the Committee, which affirms that the true policy of the State requires that its funds should, in the first instance, be *exclusively* applied to providing the means of internal transportation, and in creating and improving markets, within her own limits. This resolution was opposed by Messrs. Iredell, Badger, Sneed, O'Brien, Graham, and Nash; and advocated by Messrs. J. A. Hill, Strange, Gaston, J. H. Bryan, Haywood, Henry, and Patterson.

The Report, as adopted, embraces substantially the following Resolutions:

1. That the condition of the State requires that a liberal system of Internal Improvement should be immediately organized and vigorously prosecuted.

2. That the Legislature ought to provide a fund, by loan, or otherwise, to enable the State to contribute substantial assistance in the prosecution of works of Internal Improvement.

3. That true policy requires that said fund should be appropriated, in the first instance, to build up markets in our own State.

4. That it be recommended to the Legislature to provide, by law, that the State shall subscribe for two-fifths of the Stock in any Company hereafter incorporated for the purposes of Internal Improvement, whenever the other three-fifths shall be paid, or secured to be paid, by individuals.

5. That the President shall appoint a Committee to prepare an Address to the people of the State, on the subject of Internal Improvement.

6. That the Proceedings of the Convention be laid before the Legislature at its next session.

7. That Committees of Correspondence be appointed in the several counties.

8. That it be earnestly recommended to the citizens of the several counties in this State to elect three Delegates from each county, to hold a Convention in the city of Raleigh, on the 4th Monday of November next, to deliberate further upon the subject of Internal Improvements.

To the passage of the third resolution, Mr. O'Brien, of Granville, entered a protest, which, agreeably to his request, shall appear in our next, when we publish the proceedings.

The Convention having got through with the business before it, and a resolution of thanks having been voted to the President for his impartial discharge of the duties of the Chair, that gentleman rose and delivered one of the most interesting and pertinent addresses which it has ever been our good fortune to hear. We shall not attempt a description of the vigorous arguments, the warm eloquence, or glowing imagery of the speaker. His mind seemed to pervade the assembly, and to control their feelings. It was our State—our whole State—and nothing but our State—her pride, her glory, her hopes and fears—that was the life and soul, and pervading spirit of his eloquence.

TUSCUMBIA, COURTLAND, AND DECATUR RAILROAD.

Engineer's Office,
Tuscumbia, March 4, 1833.

To the President and Directors of the Tuscumbia, Courtland, and Decatur Railroad Company.

Gentlemen,—In pursuance of a resolution of your Board, passed the 12th February, I respectfully present my first annual report, detailing the operations in my department for the past year, under their proper heads, with such general observations, in view of the future, as seem to be of interest or importance to the Company.

The Location of the Route.—Soon after my appointment as your principal Engineer, in March last, I proceeded to the definitive location of the First Division of the Railroad, extending from Main street in the town of Tuscumbia, to Town Creek, being a distance of 14 miles 62 chains and 75 links, or 14·784 miles.

Subsequently, in compliance with an order from your Board, the route was continued, and that part of the Second Division of the road, extending from the west bank of Town Creek, to the east bank of Big Nance, near the town of Courtland, was staked out, being a distance of 8 miles and 4 chains; making the whole distance from Main street in Tuscumbia, to the east bank of Big Nance, 22 miles 66 chains and 75 links, or 22·834 miles. The distance, in a straight line drawn from point to point, is 22 miles 25 chains and 29 links, or 22·316 miles. The distance of the route of the railroad exceeds the nearest distance between the points 41·46 chains, or 518·1000 of a mile, equal to 2¼ per cent. A table is annexed, marked A, exhibiting the length of straight line, the length of curved line, and the radius of curvature of the curves; from which it will be seen that the plan of the road consists of 27 straight lines, and 26 curves; that the total length of the former amounts to 19 miles 76 chains and 75 links, or 19·659 miles; and of the latter, to 2 miles and 70 chains, or 2 7-8 miles, and that the proportion of straight line to that of curved is as 7 to 1, nearly. Also, that the longest straight line is 2 miles and 22 chains in length, and that there is but one curve, on a less radius, than 1512 feet, which is on a radius of 1380 feet. This curve was laid off before the minimum of 1512 feet was adopted, and the difference being so inconsiderable, it was concluded not to change it.

A table is also annexed, marked B, exhibiting the rate of ascent or descent per mile, and the amount of ascent or descent, and length of each grade in feet; and the total ascent and descent; from which it will be seen, that the profile of the road consists of 116 plane surfaces, of which number 53 are horizontal; the remainder, namely 63, are more or less inclined to the horizon, ranging from 0 to 28 feet to the mile, which last has been observed as the maximum of inclination. From this table it will also be observed that the total rise of the ascending grades is 266·03-100 feet, and the fall of the descending 177·89-100. The difference is 88·14-100, being the amount in feet by which the point of present termination, on the east bank of Big Nance, is elevated above the grade of the road on Main street in Tuscumbia.

Maps and profiles of the route have been heretofore reported, and are now referred to.

Graduation and Masonry.—Under this head is embraced all the preparation of the ground which is necessary to the laying down of the railway. Your Board will remember that, in May last, the grading of that part of the First Division of the road extending from Tuscumbia to the county line, was let to contract, and in October the grading of the remainder of the First Division, and the whole of the Second Division, extending to the town of Courtland, was also let, to Messrs. Aldridges, Warren and Davis, to be accomplished by the last day of November, 1833. The bridges over Town Creek and Big Nance have also been let to Mr. D. S. Goodloe; the former at $1930, and the latter at $900, exclusive of the masonry for the abutments, which is to be paid for at the rate of $4,25 per cubic yard. The work to be completed by the 1st of October next. The undertakers of the contract let in May are the following, viz.: Thos. Aldridge, jr. & Co. the whole of sections 1 and 2, and part of 3 and 4. Wm. Hudson, part of section 3. Messrs. Davis, Warren, and McMahon, part of sections 4, 5, and 6. Mr. John Gist, part of section 5.

The following table will show the quantity of work undertaken by each Contractor, the contract prices and amount:

	Section.	Excavation.	Embankment.	Total.	Price.	Amount.	Grubbing.	Masonry.	Remarks.
First Division	1 & 2	26890	9824	36714	11c.	4038.54			Aldridge's Contractor.
	part 3 & 4	7763	8261	16024	"	1762.64			" "
	" 3	2875	119	2994	"	329.34			Hudson "
	" 4	5928	4873	10801	10 ⅞	1174.60			Davis, Warren & Co.
	Sect. 5	3919	11307	15222	10 ¼	1560.66			Do. & Gist.
	part 6	355	3046	3401	"	348.60			Davis, Warren & Co.
				85156	10 82c.	9214.38	472	261	County line.
	Bal. 6	23421	10417	32838	11	3612.18			
	7 & 8	8159	9596	17755	"	1953.05	169	153	Town Creek.
Second Division	1, 2, 3 & 4	15,564	29395	44959	11	4945.49	617.50	391	
				180708	10 915	19725.10	1258.50	805	

Note.—The slopes for embankments on the first Division were calculated at an angle of 45°, but that angle having been found too steep the work has been laid off at an angle of 34°, or 1½ to 1, which will enhance the quantity of embankment to some extent, upon the final estimates.

From the above table the following results are deduced, viz.: That the quantity of excavation and embankment required to the county line is, 85,156 cubic yards, which at the contract prices amounts to $9214 38, equal to an average of 10 82-100 cts per cubic yard. The grubbing and masonry is estimated to cost $733, making the total expense of preparation for the reception of the rails $9,947 38, or an average of $962 96 per mile, and to complete the graduation of the road-bed, from Tuscumbia to the east bank of Big Nance, 180,708 cubic yards of excavation and embankment will be required, which will cost, at the contract prices, $19,725 10, being an average of 10 $\frac{91}{100}$ cts. per cubic yard. Grubbing and masonry, as estimated, will cost $2,063 50, which added to $19,725 10 is equal to $21,788 60, or an average of $954 21¼ cts. per mile. The bridges over Town Creek and Big Nance—the first 429 feet and the last 115½ feet in length between the abutments, are contracted to be built for $2,830, exclusive of masonry—the masonry being estimated at $425.

The following will show the total cost of graduation, bridging, and masonry, from Tuscumbia to the point last above mentioned, being a distance of 22·834 miles, viz.:

180,708 cubic yards of excavation and embankment . .	$19,725 10
Grubbing and masonry . .	2,063 50
Bridges over Town Creek and Big Nance	2,830 00
Masonry for abutments . .	425 00
	$25,043 60

Average per mile, $1,096 76¾.

According to the contracts let in May last, the graduation to the County line was to have been accomplished by the first day of November—but difficulties have arisen, which were beyond the control of the agents of the Company, or the power of the contractors to overcome. Immediately after the contracts were let, the principal contractors, T. Aldridge, jr. & Co. and Davis, Warren, and McMahon, commenced operations upon their respective sections, with that energy and promptness, which, under ordinary circumstances, cannot but succeed in the accomplishment of its ends. But the work had not progressed far, when the contractors began to be impeded by land proprietors, at different points along the line, and it became necessary for them to shift from place to place, in order to keep what force they happened to have on hand at work.

It is believed, that had the difficulties mentioned not occurred, the grading of the road from Tuscumbia to the county line would have been accomplished within the time promised in the contracts.

The following statement will show about the amount of labor that has been done between the town of Tuscumbia and the county line, and also what remains yet to be done, viz.:

Thos. Aldridge, jr. & Co. have completed in excavations and embankments, say	34,600 yds.
Davis, Warren & Co. . .	20,000 do.
Mr. Gist has completed his .	4,025 do.
Mr. Hudson has done about .	2,000 do.
	60,625 yds.
There remains to be done by T. Aldridge & Co. . . .	18,000 yds.
Davis, Warren, & Co. . .	7,600 do.
William Hudson . . .	1,000 do.
	26,600 yds.

The grubbing and chopping may be said to be almost entirely done. Of masonry there remains something more than a proportion to be done, taken with the excavation and embankment. The bridges in overcovering Dry Creek yet remain to be done. The distance taken up by the work that remains to be done amounts to about 3½ miles.

Thus it appears that in point of distance, 6¾ miles is accomplished, while 3½ miles is yet to be done, or about two-thirds of the space between Tuscumbia and the county line may be said to be graded; and in point of labor required, nearly three-fourths is done. Quite lately, as your Board are apprised, the obstacle heretofore interposed by Capt. Jones has been done away by the verdict of a jury—and the contractors have entered upon the work with a considerable force. Messrs. Aldridges, Davis, and Warren, have united their forces, and will finish the grading as they progress towards the county line, so that the construction of the railway can immediately follow. Mr. Hudson is actively engaged on his contract, and will finish, if the weather permit, in a very short time.

The following certificates upon the Treasurer of the Company have been granted on account of work done towards the graduation of the road, viz.:

To Thos. Aldridge, jr. & Co. on account of excavations and embankments, grubbing and masonry	$3,233 69
To Davis, Warren & McMahan, on account ditto	1,900 00
To John Gist upon a final estimate	469 63
To Wm. Hudson upon his contract	50 00
	$5,653 32

Construction of the Railway.—Under this head will be embraced the laying down of the sleepers, string pieces, and the iron rails, as also all the materials used in the construction of the railway.

Your Board will remember that in May last contracts were entered into at Courtland, for a sufficiency of sleepers and string pieces, to extend from Tuscumbia to the county line, a distance of 10 1-3 miles. These materials were stipulated to be delivered as follows: A quantity of sleepers, sufficient for one section of two miles, to be delivered by the 15th of August and a like quantity every 15 days thereafter till the contract should be supplied. Of string-pieces, a sufficiency for one section of two miles was to be delivered by the 1st day of September, and a like quantity in each two weeks thereafter, until the contract should be filled. But indications of a failure on the part of the contractors were observed before the time for compliance had arrived; and your Board being convinced of the fallacy of a reliance on those contracts, authorized a committee of three persons, (of whom your engineer was one,) to make other contracts to supply the whole, or any deficiency that might happen by reason of the non-compliance of the 1st contractors. The time being near at hand when the timbers were actually wanting, it was deemed advisable to engage as many persons in this business as could be induced to work at it. Accordingly a price was offered, viz.: 30 cents for cedar sleepers, 5 cents per foot for cedar string pieces, and four cents per foot for oak and poplar ditto, to be delivered upon the line, wherever directed. It was soon apparent that a sufficiency of sleepers would be obtained in pretty good time, but that the string-pieces did not come in so fast, owing, in a good measure, as is believed, to the difficulty of getting the proper quality of timber, and the extra skill required in preparing the same. There has been delivered upon the line, as appears from the Inspector's report, as follows viz.:

Cedar sleepers,	12,159	
Mulberry, .	233	
	12,392	sleepers.
Cedar string-pieces,	17,356	feet
Oak, "	25,644	
Poplar, "	3,860	
Mixed parcels,	4,516	
	51,376	ft. strings.

There are about 10,000 feet of string timber, and about 1000 sleepers upon the line not yet inspected, which, when added, will make the quantity of 61,376 feet of strings, and 13,392 sleepers; which shows a deficiency at this time, between this and the county line, in strings, of 47,744 feet, and of sleepers, of 248. On account of this part of the work, certificates on the Treasurer to the amount of $6,145 41 have been granted, viz.: on account of sleepers and string-pieces 5,645 41, and on account of laying down do. $500.

About 5,000 bars of railroad iron have been received, which will be sufficient to lay the rails for about 6¼ miles, and a like quantity is daily expected, which will constitute a supply to reach some distance above the county line.

On the 16th day of July last, the following proposals were acceded to by our Board, for the construction of the Railroad from Tuscumbia to the county line, viz.: Thomas Aldridge, Jun. & Co. for the laying down the timbers, iron, &c. for the first section of two miles, at $1 85 per rod run; section No. 2, at $1 90, and section 3, at $1 95, and for filling in the earth between the string-pieces ready to receive the gravel for the horse-path, and for the covering the ends of the sleepers outside of the strings, at the rate of 20 cents per rod, making an average of $2 10 per rod for the work stipulated to be done.

Messrs. Warren and Davis have undertaken the same description of work, upon sections 4, 5, and part of 6, at the rate of $2 19 per rod. The following statement will show the cost of construction of this portion of the road, viz.:

The first three sections, say 1920 rods, at - -	$2 10=4032 00
Sections 4, 5, and part of 6, say 1387 rods, at - -	$2 19=3037 53
Total for 10 1-3 miles,	$7069 53

7069 53 ÷ 3307 rods=$2 13 average per rod.

These undertakings were stipulated to be done by the 1st day of January, 1833; but from several causes the work has been retarded. The following brief statement will show how much of the work has been accomplished, and how much remains now to be done.

The sleepers are laid for a distance of about 3¾ miles, the string-pieces upon which are laid for a distance of 1 1-8 miles, and one half mile extending from Main street, in Tuscumbia, is laid with iron.

Thus it appears that upon about 6½ miles, nothing has been done towards the laying down of the superstructure of the road; that one half mile is finished; that upon 2 1-8 miles the sleeper and strings are laid; and that upon a little over two miles, the sleepers only are laid down. A specification is annexed, marked C. describing the mode of construction of the Railway in detail, in accordance with which the work now progressing is laid down. On the 9th day of October last the proposals of the Messrs. Aldridge, Warren & Davis, were accepted, and contracts entered into, for the construction of the remainder of the first division, and the whole of the second, extending from the county line, to the town of Courtland, at $2 10 per rod run—all to be completed by the last day of November next. The distance from the county line, to the east bank of Big Nance, is 12½ miles, equal to 4000 rods, which, at $2 10 per rod, will amount to $8,400. Contracts have also been entered into, for a full supply of sleepers and string-pieces, to be all of cedar, for the portion of the road from the county line to Courtland, to be delivered upon the line by the 1st day of September next—the sleepers at 30 cents, and string-pieces at $5 00 per hundred feet. These materials will cost, for 12½ miles, $11,550. The following will show the cost of construction from Tuscumbia to the county line, and also from the last named point to station 321, on the east bank of Big Nance, including every thing, except the gravelling of the horse-path:

65⅓ tons iron rails, at $51 per ton,	$8,470 00
11,875 lbs. spikes and joint plates, at $10½, - - - - - -	1,246 87
Ditching and turn-outs, - -	723 00
13,640 sleepers, at 30 cents, -	4,092 00
109,120 feet cedar and oak strings, at an average of say 4½ cents,	4,910 40
Constructing of road, and filling horse-path of earth and covering ends of sleepers, at $2 13¾ cents per rod, - - - - - -	7,069 53
	$26,511 80

CONSTRUCTION FROM COUNTY LINE TO BIG NANCE.

Sleepers and string-pieces for 12½ miles, as before stated, - -	$11,550 00
200 tons iron, at $51, - - - -	10,200 00
17,100 lbs. spikes and joint plates, at 10½, - - - - - - -	1,795 50
Ditches and turn-outs, - -	875 00
Construction of Railroad, &c. -	8,400 00
	$32,820 50

26,511 80 divided by 10,334 miles=$2,565 49¼ average per mile, to the county line, and 26,511 + 32,820 60 ÷ 22, 83 miles=$2,598 42 average per mile to Courtland.

SUMMARY.

The graduation, masonry, &c. from Tuscumbia to the county line, will cost - - - - - -	$9,947 38
The construction to the same point as above, - - - -	26,511 80
Add for contingencies 10 per cent.	3,645 90
	$40,105 09

Average per mile, $3,880 88.

Graduation, bridging, masonry, &c. from Tuscumbia to the east bank of Big Nance, - - - -	$25,043 60
Construction to same point, -	59,332 30
Contingencies 10 per cent. - -	8,437 59
	$92,813 49

Average per mile, $4,064 70.

Making the total cost of the Railroad to the county line, 10⅓ miles, $40,105 09, including 10 per cent. for contingencies; and the aggregate expense to the east bank of Big Nance, will be $92,813 49.

There has been paid to the contractors on account of the first portion, as follows, viz.:

On account of graduation, &c. -	$5,653 32
On account of sleepers and string-pieces, &c. - - - - -	6,145 41
	$11,798 73

Which being deducted from $40,105 09, leaves $28,306 36 to be paid in part, during the progress of this portion of the work and the balance will be due when it is finished. The contracts from the county line to Courtland being made on time, the following will be about the periods at which the payments will become due, viz.: between this and the 1st of October next, on the following accounts, viz.:

On account of graduation and construction, - - - - -	$3,000 00
For masonry of abutments to bridges,	425 00
For iron, say - - - - -	6,000 00
Sleepers and string-pieces, say -	2,000 00
Total to be paid by the 1st of Oct.	$11,425 00

The following between the 1st of October and the 1st of January, 1834:

On account of graduation, &c.	$8,000 00
" " iron, - - - -	6,000 00
" " sleepers and strings,	2,000 00
" " joint plates, - -	1,800 00
	$17,800 00

The remaining balance of $23,483 40 will be due and payable, the one half on the 1st July, 1834, the other half on the 1st of January, 1835. Thus it appears provision is to be made for the payment of - - - - - $28,306 36 between this and 1st of June next.

This amount by 1st October next,	11,425 00
" " " January, 1834,	17,800 00
" " " July, 1834, -	11,741 70
" " " January, 1835,	11,741 70
" having been paid, - - -	11,798 73
Total sum of estimates, - -	$92,813 49

RAILROAD DEPOT.

Early last spring a site was selected for a Depot, at the termination of the Railway, at the Tennessee river. Contracts were immediately entered into for the different parts of the work, and the building commenced with the view, if possible, to have it accomplished by the 1st day of December last. But from various causes the work did not progress with that celerity that had been expected, and finally the winter and bad weather set in, since when much could not be done. The brick work has been up some time, and the carpenters are now engaged in finishing their part of the work. The inclined plane being nearly finished, and the floors nearly laid down, it is hoped that the house will in a few days be of use to the company for their receiving and shipping business, which has thus far been attended with much extra labor and expense. In regard to the plan and location of the warehouse, it will probably suffice to say, that it is located upon an elevated point of land near the junction of Spring Creek with the Tennessee river. The building is 75 feet, in a parallel direction with the river, extending back 60 feet, three stories high, the first of strong rubble masonry, the other two of brick work. The upper floor—being the one on a level with the Railroad—is elevated above high water mark 62.37 feet, and above the lowest water mark 85.75.

The front next the river is set back 105 feet, horizontal distance, from the edge of low water. An inclined plane is erected, passing from the edge of low water into the house, upon the second floor, and terminating upon the upper floor.

This inclined plane is designed to be worked by horse power, when proper gearing (the construction of which is in progress) shall have been erected back of the house for that purpose. For the present a wheel and axle will be used. A floating wharf will be constructed to accomodate itself to the inclined plane, at the different stages of the water in the river, along side of which boats will land and discharge their freight, to be elevated into the warehouse by means of the inclined plane. A memorandum, marked D. is annexed, containing some calculations and further explanations relative to the above.

The two lower stories of the house are expected to be used for the storage of cotton, which is received into the house by means of a schute, or schutes, and discharged again by another construction of the same kind, conducting the cotton to, and upon, the floating wharf above mentioned. The following certificates upon the Treasurer of the Company have been granted on account of the above described work, viz.:

To Manly H. Davis, for the stone work, - - - - -	$1,397 56
" David S. Goodloe, for do. -	194 75
" C. C. Carlton, for do. - -	42 31
" S. J. & G. O. Ragland, for brick work, - - - - -	500 00
	$2,134 62

The final estimates not having been made, it cannot be accurately ascertained what the whole cost of the work will amount to; but we shall be pretty near the truth in estimating it at $7,000.

(*To be continued.*)

Locomotive Steam Engine. By J. B. JERVIS.

To the Editor of the American Railroad Journal.

DEAR SIR,—The Locomotive Steam Engine for the Saratoga and Schenectady Railroad, of which I promised to give you some account, was put on the road the 2d inst. and has been in regular operation since, making usually two trips (equal 84 miles) per day, and carrying daily over the road about 300 passengers.

The Engine was made by George Stephenson & Co., at Newcastle, England. The boiler has tubular flues, on the same plan as all of recent construction at that establishment. The leading objects I had in view in the general arrangement of the plan of the engine, did not contemplate any improvement in the power over those heretofore constructed by Stephenson & Co., but, to make an engine that would be better adapted to Railroads, of less strength, than are common in England; that would travel with more ease to itself, and to the rail on curve roads—and would be less affected by inequalities in the rail,—than is attained by the arrangement in the most approved engines.

You are aware of the fact, that the Saratoga and Schenectady rail is constructed of timber, capped with an iron plate. This kind of road cannot be expected to bear as heavy weight on the wheels of its carriages as those that have an entire iron rail; and, in order to obtain that degree of power which is desirable for an engine intended for high speed, it became an object to put the weight on six wheels, instead of four. Engines mounted on six wheels were constructed several years ago in England. The object was to distribute the weight on more points, to make them easier for the road than the four wheeled engines; for even with the iron rail, the heavier carriage is injurious to the road. There was a difficulty, however, in the practical operation on the plan adopted. The load was forced to bear at times very unequally on different wheels, owing to inequalities in the road, and having all their wheels under one frame, they did not work as well on curved roads as the four wheeled engines, which could be geared much shorter. In consequence mainly of these difficulties, the six wheeled engines were abandoned, and I believe no attempt has since been made in England to use more than four wheels.

In the Saratoga engine, I have adopted two distinct frames. One frame embraces four wheels in the same manner as a common waggon: these wheels are all small (32 inches) in diameter, and of uniform size; one end of the second frame is mounted on the third pair of wheels, which are the working wheels, and the other end is rested on friction rollers in the centre of the first frame, to which it is secured by a strong centre pin. The small wheels, with their frame, work on the road the same as an independent waggon; and being geared short, they go round a curve with as much ease as a common waggon, and being the leaders—they bring round the working wheels, and the large frame on which the whole machinery of the engine rests, with as much ease as practicable. By this method it will be seen the engine may pass a curve with the same ease as a common railroad carriage, having the same weight on the wheels. The machinery of the engine is not affected by the curve motion of the carriage. In order to give the four wheeled engine carriage as much facility as practicable in turning curves, the wheels have generally been placed near together, bringing the bracing points of the frame so near the centre, in a longitudinal direction, as to cause the inequalities of the rail to produce increased motion to the ends of the frame, and consequently to the engine and boiler which is connected with it. This, in the English engine belonging to the Mohawk and Hudson Company, was such as to render the motion very unfavorable to the engine, and severe on the road. By allowing the bearing points to be near the ends of the large frame, and resting one of these points on the centre of the small frame, as is done in the Saratoga engine, this difficulty is almost entirely remedied.

Th engine was set up at the shop of the Mohawk and Hudson Railroad Company, under the direction of Mr. Asa Whitney, the present superintendant of that road, and who has from its commencement had charge of the machine shop connected with it.

Thus far the engine appears to do all that was anticipated from it. No test has yet been made of its power; but, from the rapidity with which it generates steam, there appears no doubt of its performing all that it was calculated to do. It passes a curve without any more appearance of labor than a well geared common carriage. The principle of its arrangement does not admit of more strain coming on any one wheel than is assigned for its regular labor. The motion of the engine is highly satisfactory; it moves with almost as smooth and steady a motion as a stationary engine; it travels over the road in an elegant and graceful style.

I made a plan for a six wheeled engine for the Mohawk and Hudson road, which was completed and put in operation before I made the plan for the Saratoga engine. This engine proved satisfactory so far as regarded the principle of a six wheeled carriage, and was an important pioneer for the second plan. The superior ease with which this engine moved, both for its own machinery and the road, led to the determination to alter the English engine on the Mohawk road, so that it could be placed on a six wheeled carriage. As the engine was particularly arranged for four wheels, this could not conveniently be done in any other way than by communicating the power through the intervention of a bell-crank, which was very successfully done by Mr. Whitney. This engine is now working on six wheels, and the ease and smoothness of her motion, over that she had when on four wheels, is very striking.

The arrangement on six wheels does not admit of the wheels under the main frame being connected with those under the small frame; consequently, we can only obtain the adhesion of one pair of wheels. This, however, is hardly of any importance when high speed is wanted.

Should further experience confirm what the operations thus far appear to warrant, the plan of the Saratoga engine may be viewed as a valuable improvement. She has used for fuel a coke of inferior quality, made in New-York, with which she has worked very well. Yours, &c. J. B. Jervis.

Albany, 18th July, 1833.

Happiness.—Happiness does not so much depend upon our circumstances, as the agreement between them and our dispositions.

Gravity.—Gravity belongs more to the *ass*, than the horse; it oftener conceals ignorance than indicates knowledge.

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

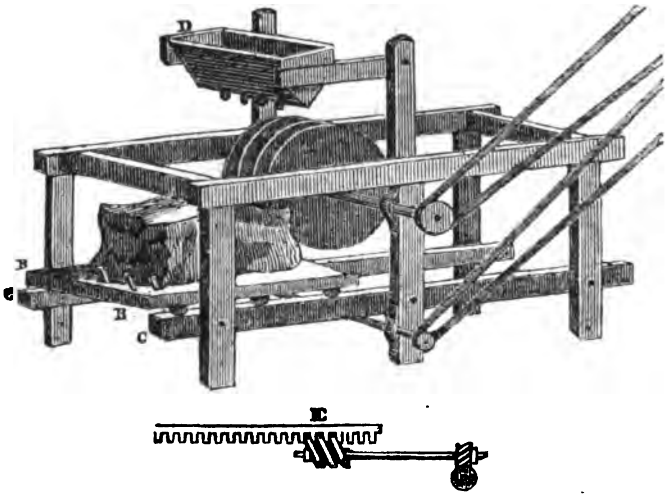
For the Fortnight ending July 22d, 1833, *inclusive.*

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometer.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
July 9	6 a. m.	73	29.77	wsw–w b s	moderate	w by s	cl'dy-rainy–cl'dy-rainy
	10	78	29.80	w	..	sw by w NW	rainy—cloudy
	2 p. m.	82	29.80	NW	..	.. NNW	fair
	6	76	29.87	NNW	fresh	NNW	..
	10	66	29.98	..	moderate	..	clear
" 10	6 a. m.	63	30.05	..	..	WNW	fair, with haze fr WNW
	10	72	30.10	SW	..	..	.. .. ..
	2 p. m.	78	30.07	..	..	..	.. .. ..
	6	74	30.01	..	..	WSW	.. .. ..
	10	68	30.03	..	..	..	.. .. ..
" 11	6 a. m.	63	29.98	..	..	..	..
	10	74	29.95	SSW	..	..	..
	2 p. m.	81	29.85	S	..	..	..
	6	76	29.78	..	..	..	.. cloudy at NW
	10	72	29.78	..	..	..	thunder storm
" 12	6 a. m.	68	29.77	N	..	NW	fair scuds fr NW
	10	74	29.80	W	..	WNW	..
	2 p. m.	82	29.81	w by s	..	w	..
	6	80	29.87	..	..	..	.
	10	74	29.95		..		..
" 13	6 a. m.	70	30.04	ENE	light	w by s	cloudy —fair
	10	76	30.06	E—SSE	..	w	fair
	2 p. m.	84	30.06	SSE	..	..	..
	6	79	30.03	..	..	.. SSE	.. light sea scuds fr SSE
	10	74	30.04	..	..	SSE	.. .. ..
" 14	6 a. m.	74	30.00	S	..	SW	..
	10	83	29.95	S—SE	..	..	..
	2 p. m.	89	29.86	SE—NW	strong	.. S	.. thun. at 3–heavy thun. sho'r at 4½
	6	76	29.85	S—SE	faint	WSW	cloudy–shower at 8½—
	10	73	29.83	..	..	..	rain [fair
" 15	6 a. m.	76	29.85	WSW	light	sw by w	fair
	10	78	29.90	w by s	moderate	.. NW	..
	2 p. m.	82	29.88	..	fresh	.. W	..
	6	74	29.90	..	..	SW	..
	10	70	29.93	..	..		..
July 16	6 a. m.	62	29.96	WSW	fresh	SW	fair
	10	70	29.94	SW	moderate	..	..
	2 p. m.	77	29.93	..	..	..	..
	6	75	29.90	..	..	W	..
	10	71	29.90		..		..
" 17	6 a. m.	66	29.90	NNW	light		cloudy
	10	70	29.91	..	..	WNW	.. —light showers
	2 p. m.	75	29.93	NNW—W	..	W	fair
	6	72	29.98	WSW	faint	..	..
	10	69	30.02				..
" 18	6 a. m.	63	30.08	SSW	light	SW	..
	10	70	30.10	SW	..	W	..
	2 p. m	78	30.12	W	..	..	..
	6	73	30.13	NW	..	NNW	..
	10	68	30.20	..	..	NW	..
" 19	6 a. m.	62	30.22	NNW	moderate	W	..
	10	70	30.23	..	..	..	..
	2 p. m.	79	30.25	W	fresh	SW	.. atmosphere hazy
	6	74	30.19	SE	..	NW	cloudy—light showers
	10	71	30.18	..	..	..	.. —hvy rain in the
" 20	6 a. m.	64	30.08	..	moderate	W	fair —cloudy [night
	10	66	30.09	NE	..	NNW	cloudy
	2 p. m.	73	30.10	..	..	NW NE	.. —fair–scuds fr NE
	6	67	30.12	..	fresh	..	..
	10	67	30.12	..	..		..
" 21	6 a. m.	70	30.15	NW	moderate		fair–cloudy in the west
	10	73	30.15	N	..	N	cloudy
	2 p. m.	77	30.15	SW	..	..	fair
	6	74	30.10	SE	..	NW	..
	10	70	30.10	WSW	light	WSW	clear
" 22	6 a. m.	71	30.08	..	..	..	cloudy
	10	77	30.05	..	..	..	fair
	2 p. m.	89	30.01	..	..	NNW	..
	6	86	30.00	NW	..	..	..
	10	84	30.03	..	..		..

Average temperature of the week ending Monday, July 15th, 75°.17.

Do. do. do. do. 22d, 72°.40.



Specification of a patent for an improvement in the method of sawing Marble, and other stone, and cutting or working mouldings, or groovings, thereon, and polishing the same. Granted to Isaac D. Kirk, city of Philadelphia. [From the Journal of the Franklin Institute.]

References—A, The saws, or the moulding cylinder of soft cast iron; B, Carriage to support and carry forward the marble, or stone; C C, Rails on which the carriage travels; D, Hopper for sand and water; E, Apparatus for advancing the carriage.

To all to whom these presents shall come, be it known, that I, Isaac D. Kirk, of the city of Philadelphia, and state of Pennsylvania, have invented a new and useful improvement in the method of sawing marble and other stone, and cutting, or working, mouldings, or groovings, thereon, and polishing the same; the sawing being performed by means of an improved revolving, circular, metallic plate, smooth, or without teeth, upon the face, or edge, operating by friction with sand and water upon the material to be cut; and the moulding, or grooving, and polishing, being effected by means of the improved revolving moulding and polishing cylinder, or wheel, operating in cutting mouldings by friction with sand and water upon the surface to be wrought; and in polishing by friction, in like manner, with putty, buff, pumice-stone, or some other suitable material; viz. one or more circular metallic plates, smooth or not serrated upon the face, or cutting edge, (copper, or soft iron, are deemed preferable,) are securely fixed, vertically, upon a horizontal shaft, or spindle, of iron, of any required dimensions, passing through the centre of the plate, or plates, and supported at each end by a proper frame of wood, or of cast iron, upon which the shaft works. On one end of the shaft is a cog wheel to connect it to the moving power.

Where two or more plates are used on the same shaft, they are secured at the proper distance from, and parallel to, each other, by circular metallic bands of a thickness adapted to the intended thickness of the slab, or slabs, to be cut; which bands are fitted upon and around the shaft between the plates, or saws. Under the shaft, at the distance of a little more than the radius of the plates, or saws, is a carriage on friction rollers, or wheels, resting on a permanent railway, to support and carry forward the stone, or marble, to the plates, or saws; it is moved either by a rack and pinion, or by weights and pulleys. Over the saws is fixed a hopper, filled with sand and water, which is carried by a conductor leading from an aperture in its bottom, to the saws, at the point of their contact with the stone or marble. The plates, or saws, may be made of any required dimensions, and must be wrought to a uniform thickness throughout, with the cutting edge smooth, or not serrated, and either rounded, bevelled or flat. The improved moulding and polishing cylinder, or wheel, is of any metal, (cast iron is preferable for moulding, and some of the softer metals, and wood, for polishing,) and of any requisite dimensions, having the converse of the intended moulding, or grooving, either cast or turned upon its surface, or periphery, by means of which any series of mouldings, or groovings, can be wrought on a surface of marble, or stone, at one operation, and in like manner be polished. It is fixed upon a horizontal shaft passing through its axis, which is turned by a cog wheel connecting it to the power, and operates on the material to be wrought, by revolving vertically against its surface in contact with sand and water in cutting mouldings, and in contact with pumice-stone, buff, putty, or some other suitable material in polishing. A cylinder, having a regular smooth surface, is used in like manner for flatting, and for polishing a plain surface. The marble, or stone, is carried forward, and under the moulding and polishing cylinders, by a mechanical arrangement similar to that before described.

The polishing cylinder is similar in form to the above, and used in like manner with polishing powder, as putty, buff, &c. instead of sand, and is made of wood, or some of the softer metals.

The improvement claimed by said Isaac D. Kirk consists in the sawing of marble, or other stone, by means of a revolving, circular, metallic plate, smooth, or not serrated, on the face, or edge, and applied with sand and water, as is done with the straight saw; and also in making or forming upon the surface, or periphery, of a metallic or wooden cylinder, or wheel, the converse of the intended moulding, or grooving; by means of which, a series of mouldings, or grooves, can be wrought on a surface of marble, or stone, at one operation, with sand and water; and in like manner, polished with putty, buff, pumice-stone, or other polishing material.

Isaac D. Kirk.

Remarks by the Editor.—From the information which we have received relating to the above described machine, its invention appears likely to mark an important epoch in the art of working marble; this information has been derived from a gentleman of much intelligence, residing in Philadelphia, who relates only what he himself witnessed, as regards the operation of the machinery, and which we will give in his own words.

"I embrace," he says, "this opportunity of stating what I have seen of the practical operation of the experimental machinery erected here by the patentee; which, I will observe, was of very rude construction, and capable of great improvement in its application on a more extended scale. The saw used in these experiments was a circular copper plate of thirty-one inches in diameter, attached to a shaft working horizontally on a slight frame of wood, and turned by means of a band and whirl. I have seen this saw, worked by the power of *one man*, cut through a block of our hardest marble, one foot in length and depth, or one foot square, in thirty minutes; and with increased power I doubt not it might be done in much less time.

"I also, at the same time, saw the moulding wheel, of cast iron, work out mouldings on a slab of marble one foot in length, in one minute and a half, and have no doubt that the same could be done more rapidly with machinery less rudely constructed.

"The marble is left by the saw, as well as by the moulding wheel, or cylinder, in a state fit for polishing, without any preparatory chiselling, or rubbing down with sand; and the polishing is performed in the same manner as the moulding, and with equal or greater rapidity."

We are informed that in the sawing of large blocks of marble in the ordinary way, from six to eight square feet is accounted a good day's work; but that in the cutting of small blocks, a workman can rarely cut more than two or three feet. From the experiment above recited, it appears fair to conclude that ten times as much can be effected by Kirk's machinery, when operating on small blocks, and probably upon any which are not too large for the circular saw. This also, it may be observed, is not limited in its diameter by the same cause which limits those made of a single plate for sawing timber, namely, the expansion by heat, which causes the saw to buckle, an effect which will be prevented in the cutting of stone by the saw being kept constantly wet. The cost of a saw will be saved in the work performed by it in one or two days.

The letter from which we have quoted does not mention the width of the mouldings wrought by the revolving moulding wheel, but it appears likely that the saving of time in this usually slow operation will much exceed that effected in sawing.

We perceive by the records of the patent office, that Mr. Kirk has assigned his right to Mr. Richard S. Risley, of Philadelphia.

Manufacture of Glass.—In the whole circle of manufactures there is not any thing more curious than the one that is depicted in the above engraving.* Materials, which appear of themselves but little fitted for any useful purpose, are blended together so as to form compounds of a new and entirely distinct character. Indeed, an uninitiated person looking at the sand, lead, and pearl-ashes, as they are prepared for the glass houses, would consider that nothing less than the wand of the enchanter could accomplish their change into a hard and crystalline body. The ingredients usually employed in the manufacture of glass, with their relative proportions, may be thus briefly described:

120	parts of	well washed white sand
40	“	purified pearl-ashes
35	“	litharge
13	“	nitre
1	“	black oxide of manganese.

When these materials are collected and properly proportioned, they receive a certain amount of calcination prior to their being placed in the melting pot. This operation is called *fritting*, and is performed either in small furnaces adjoining to the proper glass furnace, and heated by the same fuel, after its principal force has been expended on the glass pots, or else in ovens constructed for the purpose. The use of this preparatory process is to discharge all moisture from the ingredients, and to drive off the carbonic gas. This operation is performed gradually, and carried to the point of semi-vitrification. When the materials are sufficiently “fritted,” they are thrown with clean iron shovels, through the side opening of the furnace, into the glass-pots, the fire having been previously raised to its greatest intensity. When filled, the opening is closed with wet clay, excepting a small hole for examining the interior of the furnace. The mass soon begins to heave, and exhibit a mass of liquid grandeur, like the waves of the ocean on fire. During this process, samples for examination are frequently brought out by the aid of an iron rod, and the glass becomes beautifully clear and transparent. The glass may now be considered as completely made, but it requires some time to cool down to the requisite working temperature. It should be just soft enough to yield with ease to any external impression, even to the force of the breath, when impelled against the glowing mass, and in that state it may be bent into any required form. Such, indeed, is its tenacity, that it may be rapidly drawn into a solid string, and wound on a reel, many miles in length. Having thus brought the glass to a state fit for what is technically called “blowing,” we may introduce our readers into the workshop itself, which will be best done by the aid of a graphic illustration, and the engraved view at the head of this article will admirably answer the purpose. In the present season of the year the temperature of the blowing-house would shame the hottest portions of the torrid zone, and while we now write, we are laboring under the enervating effects of a visit, many hours back, when the thermometer stood at 140 degrees.

The workmen who are represented in the engraving are each engaged in one of the operations essential to the manufacture of a common drinking glass. For this purpose the operator takes a hollow tube, about four feet long, called a blowing iron, and dipping it into the melting-pot, turns it round till a portion of the glass adheres to the surface. He then holds it near the ground, so that the mass is extended by its own weight, and blows strongly into the tube. The breath penetrating the red hot mass enlarges it, and it becomes an elongated sphere of the requisite dimensions. To separate this globe from the iron tube, an assistant dips the end of a solid rod into the glass-pot, and bringing out at its extremity some of the melted glass, thrusts it immediately against the globe at the part directly opposite the neck, so that it may be firmly united. The workman then wets a small piece of iron with his mouth, and lays it on the neck of the globe, and it immediately cracks off, leaving the globe open at the neck. This is again introduced into the fire by the new bar of iron, and afterwards rounded on the rails of a sort of arm-chair. In order to detach the foot from the iron, moisture is again applied, and it drops off. There is a final process called *annealling*, which consists in raising the temperature in a separate oven, and afterwards allowing the glass to cool gradually; it is less likely to break.

Pliny attributes the invention of glass entirely to chance, and relates that it was first made in Syria by some mariners, who were driven on shore on the banks of the river Belus; and who having occasion to make large fires on the sands, burnt the *kali* which abounded on that shore; and that the alkali of the plant uniting with a portion of the sand on which the fire stood, produced the first stream of melted glass that had ever been observed.—[People's Magazine.]

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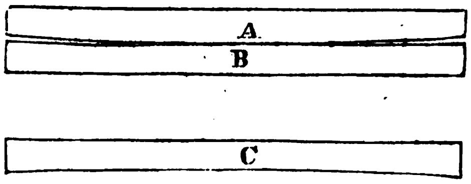
* We think this description may be sufficiently understood by our readers without the engraving.



Straight Edges.—Among mechanics there are probably but few who do not appreciate the value of a good straight edge for ascertaining the correctness of their work, and I presume that a description of the method practised, and the theory upon which it is based, will be interesting. There are doubtless many that like myself have thought it absurd, even when told seriously, by good practical workmen, that it was impossible to make *one* straight edge, without making *three*, or that one plate of an air-pump could not be ground flat, unless three were ground at the same time.

When I inquired the reason of this, I could get no other explanation from my informant than that such was the fact. Although at that time I considered the idea ridiculous, I have since discovered that my friend was perfectly correct, and, had he been able to have stated the cause or theory, I feel assured I should have been convinced.

I am aware, in the formation of straight edges, that the size must depend much upon the work to which it is to be applied, yet some regard to the form and dimensions are advisable, as there is a certain proportion more suitable than any other. An eminent English writer (Dr. Birkbeck) observes upon this subject, that in England they are made of thin bars of steel, about one eighth of an inch thick, two inches broad, and should not exceed three feet in length, as they will otherwise be liable to bend.

Three such pieces should be prepared by planishing, and one edge of each made as straight as possible by the common means of filing and planing, when they are perfected by grinding them mutually with each other, fine emery and oil being added to assist the operation. They are finally to be finished with crocus martus, or a species of loam well washed, to separate it from any coarse siliceous particles.

By referring to the cut at the head of our article, we will attempt to show the necessity of making three, to produce one perfect straight edge, and also of repeatedly changing them at proper intervals until each edge is correct. Let A and B represent two steel bars prepared for grinding; let us then suppose the edge of A to be slightly convex, and that of B slightly concave, or nearly straight, then by grinding A and B together the two edges will meet, but will not be straight, because the convex bar A has ground the lower bar B more concave, and although the two edges come in close contact, yet the form is unchanged, and, however long the grinding should be continued, the object could never be attained.

But if we now take a third bar C, the edge of which may be either concave or convex; if concave, and we grind A and C together, the edges of B and C will then be similar, and if placed against one another, the difference will be doubled, and can readily be perceived; these two are then to be ground together, and thus the three edges being alternately and reciprocally ground together, they will mutually cut down and destroy each other's imperfections, and a perfect straight edge will ultimately be produced on all the three.

The same theory applies to the levelling of air-pump plates, and other flat surfaces in machinery where great nicety is required, and the best method of producing them is to proceed in the manner above described.—[Young Mechanic.]

Co-operative Laborers.—Many of our readers are no doubt aware that some well-intentioned men have been endeavoring for a long time to effect a great change in society, by establishing a new arrangement, called Co-operation, which assumes that the laborers should be at the same time the capitalists. There can be no sort of objection to this principle, when it is proposed to carry it into action without any prejudice to the existing laws of property; and, no doubt, many of the evils of our social state might be removed, were all persons concerned in the business of production to have a sort of proprietary interest in the commodities produced. The mistake of those who exclusively call themselves co-operatives, is that of assuming that the love of individual property can be got rid of by a very short process of reasoning, and neglecting to avail themselves of the many *practical* modes in which industry might be made more productive than at present, by a union of forces, in which the personal interests of every laborer would be dependent upon the success of the business in which he is engaged. There are many examples of such real co-operation already existing in the world, some of which we may mention, from time to time. We shall now state a few facts regarding the mode of navigating vessels in the Mediterranean, by men having a common proprietorship.

With the exception of some large ships that belong to wealthy merchants of Hydra, Spezzia, &c., chiefly employed in the corn trade in the Black Sea, nearly all the Greek vessels are navigated by men taking fixed shares of the profits or freights obtained. The captain has more shares than the common men, and so has the second in command, who is generally intrusted with the *contabiliti* or accounts. When the vessel is small and the voyage short, it is sometimes the custom for each individual to lay in his own wine and provisions; but the general practice is for the captain or the second to purchase a stock for the whole, the amount of which is put on the debtor side of the account, and at the end of the voyage subtracted from the gains made: the distribution being fairly conducted during the voyage. The same system is found nearly all over the Mediterranean. The Neapolitans, the Sicilians, and the Genoese, rarely navigate in any other way.

The Italian captain has sometimes a share in the vessel, which proportionately increases his share in the profits. He is occasionally, though rarely, except when the craft is very small, the sole proprietor; but even in the latter case the men are engaged just in the same way. A small vessel called a "Bovo," or a "Paranza," of not more than sixty tons, not worth £150, is often held by as many as six or ten different proprietors.

From the town of La Torre dell' Annunziata, in the Bay of Naples, there is a coral fishery carried on. They sometimes fish about Sardinia, but the great place is on the coast of Africa, near Bona. They leave Naples in little fleets of four, six, or eight, open boats, and availing themselves of the fine summer season, venture right across the Mediterranean. These boats are navigated on the same principle. Sometimes the boat is the united property of the men in it, who give one of their number a larger share of the profit on account of his superior nautical skill or experience in the fishery. The abstemious manner in which these Mediterranean sailors, (Italians, Greeks, Sclavonians, Spaniards, Provençales, and all,) live is astonishing. Bread, *legumes*, olives, salt-fish, a little maccaroni, are their sole support. They scarcely ever taste meat.

A large portion of the shore boats that ply about the harbor at Smyrna are manned by Sclavonians, from about the Bocca di Cattaro, and by our subjects the Maltese. On an average each boat has two men; to them the boat belongs, and they divide their profits every evening. When an old boat is to be repaired, or a new one bought, the two partners club together; or sometimes, in the case of the purchase of a new boat, a third party is admitted, who receives a given share of what the boat makes.

In the Italian ships such of the sailors as have a little money are allowed to invest it in goods, and to carry these goods with them, disposing of them as they choose at the ports they touch at or are bound to. This is called the "*Paccotiglia.*" Intelligent and prudent sailors often make more money this way than by their shares in freight.

Those who have attended to this system state that the sailors are deficient in discipline; but they also observe that, in proportion as the men are of a steady and intelligent character, this evil vanishes. It is no doubt true that *mutual* interests can only be properly understood by men far advanced in civilization. Ignorance is always selfish.

Bobbin-net Trade.—A very valuable sheet of "Facts and Calculations illustrative of the present state of the Bobbin-net Trade," has just been published by a Mr. Felkin, of Nottingham. The results which it presents are exceedingly curious and instructive. The capital employed in the trade is estimated to amount to £2,310,000; the number of persons—men, women, and children—to whom it gives employment, at 211,000. The quantity of raw cotton consumed in the trade annually is 1,600,000 lbs.—value, £120,000; this cotton is manufactured o yarn, and its value increased to £500,000; the yarn is then worked into 6,750,000 square yards of power-net, 15,750,000 square yards of hand-net, and 150,000 square yards of fancy net, worth altogether £1,826,245. Of raw silk there is also used about 250,000 lbs.—value £30,000; which, when thrown and worked into 750 square yards of silk net, becomes worth £65,625. The total quantity of cotton and silk bobbin-net, annually manufactured, is 23,400,000 square yards—value, £1,891,870. Of this, about one half is exported in a plain state; three eighths are sold unembroidered at home; and the remaining one-eighth is embroidered in this country, which increases the ultimate value to £3,417,700. The total number of machines employed is stated to be 4500; of machine owners, 1382. Of these machines, 1000 are worked by power; and of the owners, above 1000 work in their own machines. The total distribution of these machines is stated to be as follows: In Nottingham there are 1240; Old Radford, and Bloomsgrove, 240; New-Basford, 95; Beeston and Chilwell, 130; Gedling, 10; Carlton, 10; Long Eaton, 10; Sandiacre, 10; Ilkestone, 45; Eastwood, 10; Loughborough, 385; Woodhouse, 30; Leicester, 95; Mansfield, 85; Sheffield, 10; Wimeswould, 25; Ruddington, 15; Tiverton, 220; Tewksbury, 50; Taunton, 35; Warwick, 5; New-Radford, 140; Lenton and Middleton Place, 70; Iron Green, 160; Old Basford and Bulwell, 55; New and Old Snenton, 180; Carrington, 50; Arnold, 30; Stapleford, 25; Stanton by Dale, 5; Heanor and Loscoe, 45; Derby, 185; Quorndon and Montsorrel, 35; Sheepshead, 15; Donington and Kegworth, 15; Chesterfield, 40; Newark, 10; Costock and Leake, 20; Melton Mowbray, 20; Barnstable, 180; Chard, 190; Isle of Wight, 80; other places, 195. Total, 4500.

Prosperous as this manufacture is in its general results—a prosperity the more remarkable, that twenty years ago there were not a dozen bobbin-net machines in the whole country—we regret to find that it has been attended in [illegible] progress with a good deal of individual distress:

"It is a lamentable fact that one-half or more of the 1100 persons specified in the list as owning one, two, and three machines, have been compelled to mortgage their machines for more than they are worth in the market, and are in many cases totally insolvent. This has chiefly arisen from the fall in prices of nets, beyond the reduction in prices of cotton and wages. This class of persons having become indebted to the cotton merchant, have been compelled to pay a comparatively excessive price for the thread they have used, and to sell their goods at the lowest price of the market. Besides, their machines are principally narrow, and make short pieces, while the absurd system of bleaching at so much a piece, goods of all lengths and widths, and dressing it for so much, all widths, has caused the new machines to be ell-wide, and capable of producing long pieces, and, of course, to the serious disadvantage, if not utter ruin of the small owner of narrow machines."

The bobbin-net which is exported in a plain state is embroidered chiefly in Belgium, Saxony, and, until recent events, in ill-fated Poland. Mr. F. thinks that but for the high rate of wages in this country, much of the work which thus falls into the hands of foreign embroiderers would be executed at home; and yet, one would think that the wages of the English embroiderer could hardly fall lower than they have already done. Mr. F. states, that he had under his eye, while writing his "Facts," some "splendid specimens of silk bobbin-net shawls, embroidered with the greatest care and beauty by young women who had worked upon them six weeks, for six days in the week, and fourteen hours a day, and had earned but *one shilling a day* by such unremitted and anxious labor." That cheaper bread and freer markets would better this as well as every other manufacture of the country, we by no means, however, intend to dispute; and we fully concur in the view which Mr. F. takes of the beneficial tendency of the two great measures of reform, alluded to in the following concluding remarks:

"If one million and a half sterling, or nearly, be paid abroad for the embroidery of bobbin-net, because the rate of wages is lower there than in this country, and if our rate cannot and ought not to be reduced, while provisions are at the actual average—if, also, there be any just ground to fear the successful competition of foreign low-priced bobbin-net laces, even in the home market,—have we not a powerful argument for the abolition of the tax on imported corn? It may also be reasonably inquired why an article, the demand for which has extended itself with a rapidity unexampled in the history of manufactures over the continents of Europe and America, should still be almost unknown eastward of the Cape of Good Hope, where it would be thought at least equally useful and ornamental?[*] The fact of the East India Company's monopoly, it is presumed, may be advanced as a sufficient, though, to the trade of Nottingham, a very unsatisfactory reply. For I would here observe, that as no one can say bobbin-net may not, in the event of this monopoly ceasing to stand in the way of its free export and sale, be generally adopted in India and China, so it is a matter of easy demonstration, that if only every woman at the head of a family in India (say nothing of China) were to use but one square of bobbin-net a year, the whole of the existing machinery of the trade, full handed and worked eighteen hours a day, would scarcely produce a supply sufficient for that market. Worked at that rate, our production would be under thirty millions of yards a year, and there are upwards of twenty-seven millions of mothers of families in our Indian possessions. Were it now to become in demand for China (and it is quite as likely to be so as tea once was for England), the quantity exported thither might possibly be immense, the population of China being three times that of India. The writer of these remarks feels that the evils contemplated as likely to result from increase of machinery, and consequent over-production, are too serious not to demand a careful and candid consideration, and is confident all will be convinced on reflection, that rather than attempt to decry the increase of the power of production, it is far more rational, and will ultimately be more successful, to draw the attention of the trade to any practicable means of increasing the demand."

To imitate Leaf-Gilding on Leather.—Take some calf-skins which have been softened in water, and beat on a stone to their greatest extent whilst wet; rub the grain side of the leather with a piece of size, whilst in a state of gelly; and before this size dries, lay on a number of silver leaves. When covered with the silver leaf, the skins are to be dried till they are in a proper state for burnishing, which is performed by a piece of large flint fixed in a wooden handle; the appearance of gold is then given to the silvered surface by covering it with a yellow varnish, or lacker, which is composed of four parts of white resin, the same quantity of common resin, two parts of gum sandarac, and two parts of aloes. These ingredients are to be melted together in an earthen vessel, and after being well mixed by stirring, twenty parts of linseed oil is to be poured in; and when the composition is sufficiently boiled to make a perfect union, and to have the consistence of a syrup, half an ounce of red lead is to be added, and the liquid passed through a flannel bag. To apply this varnish, the skins must be spread out upon a board, fastened down by nails, and exposed to the rays of the sun, and when thus warmed the white of an egg is to be spread over the silver. After it is dry the varnish is laid on which will dry in a few hours, and is very durable.

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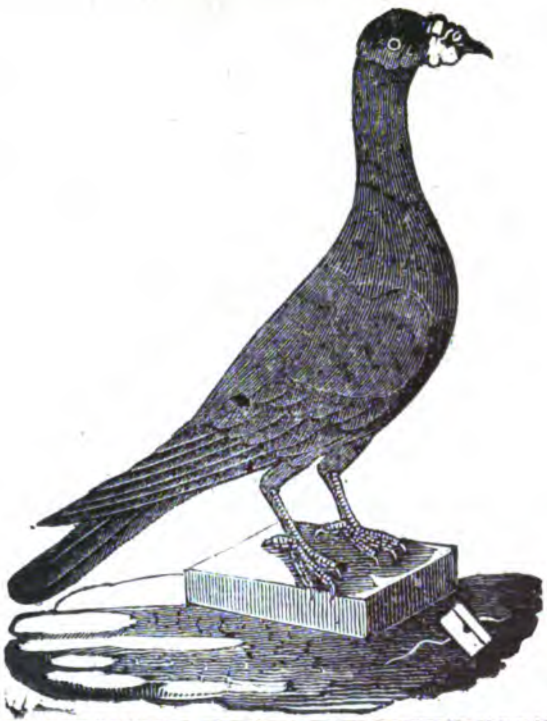
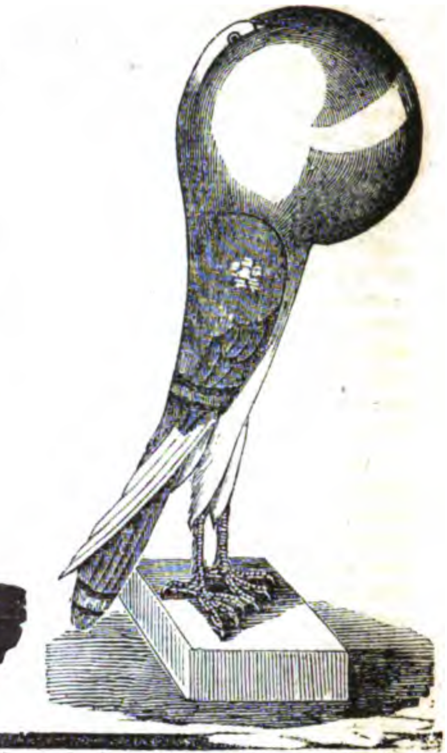
[*] "We can export a durable and elegant article in cotton bobbin-net at 4d. a square yard, proper for certain useful or ornamental purposes, as curtains, &c.; and another article, used for any purposes in female dress, at 6d. the square yard."

Carrier Pigeon.



English Pouter.



Description and Drawings of several varietie of Fancy Pigeons. By D. F. A. [For th New-York Farmer.]

Mr. Editor,—The productions of nature have ever been to me a delightful study and doubtless is so to most of the numerou readers of your Farmers' journal. While meditating on their endless varieties, habits, and shapes, the mind is enlarged, and we are imperceptibly led to adore the great First Cause In my early youth the fields, the woods, and their numerous inhabitants, bore to me a more familiar face than that of man. Free as the air, and like its feathery race, I shunned human abodes, and found companions in the leafy shade. But, alas! fate assigned me a different sphere, and torn from my much loved hil and glen I now pine in the smoke and dust of a crowded city. A little tea-tray of earth which my landlord calls a garden, and for which he makes me pay an extra rent, I have long neglected—for it made me melancholy: the poor little sickly plants that struggled hard for life through smoke and dust, and endured the oft-repeated buffetings of the cat, looked too sad, too much unlike their fellows, who had so oft refreshed my eyes with all their luxuriance and splendor. Then next bethought I of, the feathered tribe, and bought and imprisoned many a songster wild; but the poor things sang plaintively, and looked so sad, I could not keep them there; and one fine morn in spring, I set the warblers free. Ungrateful birds! not one has ever returned to make me glad with a song, although the stunted peach tree blossoms, and affords a perch before my window.

Next came domestic doves and fancy pigeons. These had so long relied on the fostering care of man, that they would starve in the harvest field. I liked them much—they would be friendly, and were every day the same—would hover round my head, or perch on my shoulder, and peck around for their food. I have many sorts and colors, brought from different climes, forming a vast republic, always wooing, laying, hatching, rearing—some for use and some for show. I will describe a few of the principal sorts, to accompany the drawings, which you, Mr. Editor, know to be correct, from having seen the living specimens, and from the fact that the branch of the fine arts, which I have long followed as a profession, qualifies me for the undertaking. But, perhaps, some of your readers may wish to keep them too: I will, therefore, first describe the apartment. I have chosen a large garret with windows to the sun. Before one of them is a cage several feet square, made of lath and wire, so that by hoisting a window, they can take the air and feel the rain without being able to escape. The room is all shelved about with boards just as they came from the timber yard, 18 inches one above the other, and partitioned every three feet. In each end of these partitions is placed, for nests," a common earthen pan, 3 inches high and 9 across. A little straw is placed in each, for some will not make their nests. These partitions are all white-washed with thick lime and water, to make all look light and clean. They should be done so once or twice a year. In the middle of the floor is a three-gallon stone jug turned upside down, with the neck in a shallow small pan. The jug, supported by an iron hoop with feet, will let the water into the pan no faster than it is drinked by the pigeons, and consequently is always cool and clean. A broad flat box about three inches deep should contain food—Indian corn and peas: or a box, called a hopper, may be made on the same principle as the water apparatus. Now for the different varieties:

First on the list stands the Carrier Pigeon, which fanciers call the King of Pigeons. This bird is so well known by report that few have not heard that it will return to its home with a letter from a very great distance, and at a rate five times faster than any animal can travel the same distance. The print is taken from one that has lately been imported, and can be seen at the Pigeon Society's Rooms, corner of Broome and Forsyth streets, New-York. This variety should be of one uniform color—either black, blue, or dun. Its distinctive mark is the encrusted flesh round its eyes and beak. They are good breeders, and worth from $10 to $15 a pair; though the bird from which the drawing is taken, $30 would not purchase.

The English Pouter. This is the most familiar of all pigeons. It has the most singular appearance. Under its beak it has a bladder or crop, which it can at pleasure fill with air to the enormous size of 18 inches in circumference. They should be of a black, blue, red, or yellow color, and have a white half moon on the front of the crop, white flights to its wings, and white legs and thighs; also, a few little white feathers in the form of a rose on its pinions; of whatever color the body is, the aforesaid parts must be uniformly white. The red and yellow birds have generally white tails, but the tails being of the same color is preferable. These birds are worth from $10 to $20 per pair.

The Almond Jamble. This is a most splendid little bird, being the smallest of the domestic pigeons; they are spotted all over with yellow, red, black and white, with a changeable green around the neck: they are said to resemble the best broken tulips when the most perfect; the female is generally less gay, being nearly of the color of the shell of the almond, from which nut it derives its name, as that color ought to prevail. They are valued more in proportion as the color is rich and the beak very small: they are very merry birds, and when flying they perform curious evolutions in the air, and will ascend a very great height, keeping on the wing for two or three hours occasionally: they are good breeding birds, and give but little trouble. They sell at from three to ten dollars per pair.

The Fantail. This bird is a very singular variety of the Pigeon tribe, its tail being turned back so as to meet its head: it is also very large, being composed of from 24 to 36 feathers: these are spread out so as to resembe a lady's fan, which have given this pigeon the name of Fantail: they are most preferred when of a perfectly white color, and some are ornamented with a very lofty tuft at the back of the head. They are worth about $3 per pair, and are good nurses, &c. D. F. A.

Beekman st. N. Y. June, 1833.

NEW-YORK AMERICAN.

JULY 20, 22, 23, 24, 25, 26—1833.

LITERARY NOTICES.

THE FLOWERS OF MELODY, a select collection of Scotch, English, Irish and American Songs, with notes critical, biographical, &c., selected and arranged by JOHN GRAHAM; 2 vols. *Clayton & Van Norden*, N. Y.—There are many collections of songs, and other lyrical compositions, made with more or less taste and discrimination—and, therefore, this now under notice can lay no claim to novelty; but it may rightly claim to have been made with good judgment and is illustrated with useful notes, which the compiler—himself a writer of Scottish songs—has interpers- through its pages. Hence we hope it may remunerate its projector, the blind Scotch Poet, who has long been resident among us, consoling himself under one of the greatest privations which can befal humanity, by invocations to the muses.

THE SELECT JOURNAL OF FOREIGN PERIODICAL LITERATURE No. III. Boston, *Chs. Bowen*.—Among the well selected contents of this number, is a capital article, which, though long, will well reward perusal, on the Memoirs of the *Duc de St. Simon*, taken from the Foreign Quarterly Review. It gives the essence of a very voluminous work, which paints the age of Louis XIV. to the life.

JOHN HOPKINS' NOTIONS OF POLITICAL ECONOMY, by the author of Conversations on Chemistry, Political Economy, &c. Boston, *Allen & Ticknor*.—It would really seem that the disciples of *Adam Smith* and *Ricardo* are now to be sought among the fair sex—at least it is certain that to two ladies do we owe at present, publications on Political Economy, more calculated to extend the knowledge of that science, and in a popular and attractive way to inculcate its beneficent principles, than any others we knew of. Of *Miss Harriet Martineau's* writings, we as yet have had no opportunity of judging, not having seen, tho' we have heard much of, them. But Mrs. *Marcet*, the author of the little volume now before us, is an old acquaintance, through her "Conversations on Chemistry:" and it is gratifying to be able to say, that the promise of that and her subsequent work, on "Political Economy," is abundantly realised in "John Hopkins' Notions." We wish every laboring man in the United States could have a copy of *John Hopkins' Notions* put into his hands: for it would tend to correct many errors, and dissipate many injurious prejudices. The Boston publishers have done good service in reprinting this book; and they have, as is the Boston fashion, reprinted it handsomely.

THE NATIONAL PORTRAIT GALLERY *of distinguished Americans*—Conducted by *James Herring*, New York, and *James B. Longacre*, Philadelphia: No. IV.—This well executed publication sustains its promises well. The portraits in the number before us are well engraved, though not always, as in the case of that of Gov. Tompkins, taken from good likenesses. Gov. Tompkins, Henry Clay, and Major General Moultrie, of South Carolina, are the subjects of this number; and their biographies are well, though rapidly sketched, and of course *en beau*.

The School Geography, by JOHN J. CLUTE. New-York: SAMUEL WOOD & SON.—Of this volume of 310 pages, 224 are dedicated to America; and that is as it should be, because in an elementary book, which is all this professes to be, much space, attention and care should be given to our own country. When boys know the Geography of their own land thoroughly, they will soon desire to find out that of other countries. After a general outline of the geography of the United States, this volume furnishes a geographical, historical and and statistical account of each State separately, with a neatly engraved though necessarily small map of every State. There is also a useful table of the comparative length of rivers in North America, and of the height of mountains in different parts of the world. It will we dare say surprize many of our readers to know that there are some six and twenty rivers in North America longer than our Hudson.

BOY'S AND GIRL'S LIBRARY OF USEFUL AND ENTERTAINING KNOWLEDGE, No. XIV. N. Y. *J. & J. Harper*.—"The Perils of the Sea" constitute the attraction of this number, which appropriately enough commences with the destruction by fire of the Kent, British East Indiaman, in the Bay of Biscay, in Feb. 1825, having on board more than 600 souls, all of whom but about 60 were rescued by the Cambrian brig, in a manner almost marvellous. If Boys and Girls do not now take an interest in learning to read, it certainly is not for want of attractive books.

THE SOURCES OF HEALTH & DISEASE IN COMMUNITIES, &c. &c.: *By* HENRY BELINAYE, ESQ. *Surgeon Extraordinary to the Dutchess of Kent. Boston*—ALLEN & TICKNOR.—The object of this cleverly written treatise is, to induce inquiry and reflection among those in authority, as to the means to be taken to remove the sources of disease from the midst of populous communities, and to guard, as far as human precautions can, against the introduction and spread of pestilence. The inquiry is one worthy of all attention; and although on this as on every other subject connected with the public health and means of preserving it, doctors will differ, yet, as in the last resort, magistrates and other persons in authority, must come to a decision of some sort, we are glad to see a treatise, which will, at least, induce those who read it, to reflect and reason a little, about what is to be done. The volume is small, neatly printed, and quite attractive as mere reading.

EXAMPLE, OR FAMILY SCENES: *Phil.*—KEY & BIDDLE—1 vol.—This is a handsome re-print of, as we take it, an English book, without any author's name. It is the story of a young man of fortune and corrupted mind—with an only sister, beautiful, volatile, and thoughtless, launched early into the world, without parental supervision—reclaimed from the paths of temptation and error by the example, and untiring solicitude for their spiritual welfare, of the family of a relative. The design is good, though not, as it strikes us, very skilfully executed. The incidents of the story are nevertheless well told; and the sequel is, as it should be, full of encouragement—never to despair while kindness yet retains a hold upon those we would reform.

MISERRIMUS: N. Y. *J. & J. Harper*.—This single Latin word, signifying "most wretched," engraved upon a tombstone in Worcester Cathedral, England—without name or date, or addition of any sort—has suggested this tale; which, laid in the time of Charles II., purports to delineate the crimes, sufferings, and despair, which could alone—it may be conjectured—explain such a hopeless inscription, on thelast earthly resting place of one who must have "cursed God and died." We are disappointed in it—for much more might have been made out of so dark a theme. The incidents assumed by the writer are altogether unnatural and improbable; and, tho' wrought out with occasional power, fail to affect as a whole. We dissent, we perceive, in this judgment from those of many English journalists, whose favorable opinions are prefixed by way of puff preliminary to the volume—but having read the book, under the influence of such praises, we nevertheless adhere to our own opinion.

A MANUAL FOR THE AFFLICTED, &c. &c., by the Rev. THOMAS HARTWELL HORNE, of St. John's College, Cambridge. Boston: *Allen & Ticknor*.—Bishop Doane, of New Jersey, has the merit of introducing to American readers this volume, resting on, and almost exclusively written in, the language of scripture. Bishop Doane has prefixed an introduction, in which the aim of the author is well set forth; and he has added, by way of appendix, some devotional poetry, well selected and appropriate. It is altogether a valuable little volume.

THE GENTLEMAN AND LADY'S BOOK OF POLITENESS, &c., by Madame CELNART; 1st American from the 6th Paris edition. Boston: ALLEN & TICKNOR.—An amusing and well written little work, dedicated to the youth of both sexes, and purporting to teach the rules of politeness and becoming deportment in all relations of life, as deduced from the usages of the politest people in the world—the French—cannot but find many readers among us. Manners, it has been well and truly said, are minor morals; and therefore it is in some sense a duty, as it is always an advantage, to cultivate them. All with whom we are casually or even for moments only thrown into contact, can judge of the kindliness and politeness of our deportment, and be more or less affected by them. Hence, upon a principle of enlightened self-interest, as well as of enlarged benevolence, it is a worthy object of effort so to present ourselves always as that those in whose company we are will be pleased. Practice, indeed, is the only sure guide in this matter; yet there are certain rules preliminary which may and should be learned, and these the book before us professes to teach.

A POPULAR GUIDE TO THE OBSERVATION OF NATURE, by *Robert Mudie*, Author of the British Naturalists: N. Y., J. & J. Harper.—The first thing that struck us after running over a few pages of the book, was, the paltry and contemptible wood-cuts, which are allowed to deform one of the most delightful volumes which the Harper's Family Library has introduced to the public, standing there frequently with their blurred outlines, and blackened shading, as if in mockery of the vivid passages they were doubtless intended to illustrate. The greater part would make Nature indignant at seeing her forms thus caricatured, unless the remainder soothed the goodess into complacency by reminding her of the chaotic lumps out of which she has reared this beautiful and harmonious creation. Can there be a more delightful study than the contemplation of that creation, or what books are worthier of perusal than those which bringing its secrets beneath our eye, teach us to exercise the priceless faculty of observation, and unlock, as with a magic key the external world around us? The strong love of nature, in an unaffected and manly mind, is an ever-salient fountain of pleasure, which the world can never dry up, or man divert; a perennial flower of delight, which no chance or change of life can cause to droop or wither.—The storied associations of the school-boy, are broken by the realities of the world, and the romance of youth with its dreams of love and heroism, like that false light which precedes the dawn, is lost in the glare of manhood—but the love of nature, of the broad streams and the blue mountains we have swam or clambered in our childhood, of the tangled thicket through which we have tracked our boyish quarry, or the tall forest that has echoed to our shout, when life was young—this is a love which knows no change, and passeth not away; and he in whom that love is strong has a hoard of wealth in his own bosom, that can purchase him enjoyment until its coffers decay in death.

No! There are no pleasures but pall, no pursuits but tire, no joys but are linked with pain; no search after knowledge, or happiness, or power, but ends in disappointment; no one study that is satisfactory, but this high and holy, this ever fresh and beautiful one of the glorious creation around us,—this ennobling contemplation of "God's own temple," whose pavement we tread and whose dome is stretched above us. Love of the country is the earliest instinct of our childhood, and though the artificial habits and depraved tastes of maturer life may for a while supplant or suspend it, it is through life an ever recurring feeling; stealing continually between us and the bustling world, like glimpses of a better state—like hope itself following us to the tomb—and even then surviving in the wish that the turf may bloom there unmolested, and no structure but the cloistered boughs which bend above it prevent the dews of Heaven from weeping over our green resting place.

To awaken this feeling in hearts naturally devoid of it, if any such there be, and to regulate and elevate it in character in those already blessed with it, is the object of the book before us. And the writer seems to have brought just those qualifications to the work which could have been desired by the most ardent wisher of a successful issue to his labors, viz: an observing analyzing mind, glowing with a love of its subject, and eloquent in illustrating what it logically recommends.

We are sorry that our limits prevent us doing justice to this work, by making more than a few brief extracts. *

The ineffieacy of thought unaccompanied by observation.

Let us consider those means: Do we gain knowledge of a subject by thinking about it? We do not. By thinking, we may arrange our knowledge, put it it into new shapes, and make it the means of letting us see what further knowledge we want, and what service that future knowledge is to be to us, just in the same manner that a tradesman, by examining his stock, can so arrange his goods, as that he can at once put his hand upon what he wants, and also know what additions it is most necessary and proper to make; but just as a tradesman cannot, by any examinations and arrangements add one tittle to the *quantity* of his goods, so neither can we, by any thinking in which we may engage, add any thing new to the stock of our knowledge. By thinking, we can arrange what we know, so that we can more readily use it, and we make room for other knowledge; but, *we cannot think ourselves into an acquaintance with even the simplest thing that we do not know by some other means.* It is the belief that we can; that thought will do what thought never did, can do, or was intended to do,—which lies as a stumbling-block in our path, and hinders us from knowing a great many things that would be very useful as well as very pleasant to us.

The possibility of Thinking out upon a matter.

When we long continue thinking on the same subjects, especially if there is any thing dispiriting in them, we do feel a sort of languor, and pass into a revery, or dreamy state, in which we not only lose the command of our bodies, as we do during slumber, but in the end lose the memory of our thoughts, just as we do in profound sleep, during which we have no dreams. Everybody must recollect instances of having thought upon subjects till the memory of all the particulars was gone; and, when an author writes an original book upon any subject that requires close and profound thinking, the chance is that he shall know less of what is in the book after he has just finished the writing of it, than an intelligent reader after he has glanced it over. "Don't ask me about that, for I have written upon it," was an habitual saying with a veteran both in science and literature; and Abernethy's constant referring of his patients to "My book" had philosophy in it, whether he understood that philosophy or not.

The Mechanics' Magazine and Register of Inventions and Improvements, Vol. I. The number published to-day completes the first volume of this excellent periodical. It is faced with a strongly engraved portrait of Eli Whitney, accompanied by a valuable memoir of that celebrated individual, whose interesting life is perhaps the best biography that can be placed in the hands of a young mechanic, to spur him on to industry and exertion, and give him just ideas of the real respectability attaching to his occupation, and the enviable distinctions to which the vigorous pursuit of it may lead. "In all countries," says the well written preface of this volume, "the importance of artizans in the scale of society has been undervalued. Those who have led on armies successfully, either in defence of their country, or who have waged war in consequence of some real or supposed grievance, as well as those who have promulgated laws which were considered beneficial to the government under which they lived, have been held up to the admiration of the world; and the benefits they have bestowed upon society form

'The theme, the admiration, and the song,'

of poets, historians, and philosophers. Yet there is no instance on record where the first constructor of a new machine is considered in the same view: he is looked upon as a mere projector of a useful invention, which is to be improved upon and brought to perfection by others. This should not be so: surely Robert Fulton, James Watt, Eli Whitney, and a host of others, deserve the thanks of the people of all nations for their inventions, in an equal degree to those who have promulgated laws, however beneficial they may operate to mankind at large; and much more so than those who have been engaged in a fierce, uncalled for, and relentless war, in many cases for the purpose of upholding tyranny and oppression.

"It is a curious fact that the power of combining machines and constructing poetry have frequently been united in the same individual. This has been overlooked by the great bulk of mankind. We have the authority of Mr. Stuart Meikleham, in his account of Steam Engines, for the following facts: Hooke made verses as well as machines; and when he presented thirty-seven different projects for flying, had his attention been directed to express his thoughts in metre, he had previously shown a facility for describing the glories of his mistress' eyebrows in as many sonnets. Lord Worcester also made verses—Sir Samuel Moreland indited love songs—Watt, in his youth, was a rhymester—Arkwright was famous for verses, which cut as keen as his razors—Rennie chanted his own lyrics, which were distinguished for their spirit and taste—and Telford, while building rough stone fences as a journeyman mason, was an esteemed contributor to the poetic corner of the Scot's Magazine; Sir W. Congreve wrote poems, as also Sir Christopher Wren—Sir Humphrey Davy wrote his address to St. Michael's Mount in the heroic measure, long before he invented his safety lamp—Dr. Arkwright distinguished himself for poetical compositions many years before he invented the power loom—Milton's hell gates move on more than mortal hinges; and his war chariots may yet form a subject for illustration in a mechanical college. The horse of Epeus has lately been adduced as an early locomotive! Homer's description of cars shows that he had an eye for beauty in carts which would have carried them to perfection; Ferdousi, of Persia, has spun one hundred and fifty thousand couplets, and has found leisure to construct several complicated pieces of machinery of his own invention—among them are spinning jennies, paper machines, steam engines, and a printing press."

These instances, it is true, answer the object the editor has in view in quoting them, by showing the important station which some mechanics have held in society, and proving the fallacy of the argument often advanced, that "the mere inventor takes no interest in any thing but his own inventions." But a better reply is at hand in the book before us. Any class of people which can command the ability displayed in a work like this, and give that work a support which shall carry it forward with the variety of instructive and entertaining matter which enriches the pages of this volume, require no further argument to assert their just influence in the community, and no better organ to represent their claims and to elevate them in character. The price of this volume, $1 50, places it within the means of almost every young mechanic. *

Natural History of the Fishes of Massachusetts, by *Jerome V. C. Smith, M. D.* Boston, *Allen & Ticknor.*—The disciples of old Isaac Walton will find in this book an agreeable addition to their piscatory library. It contains not a little new and some valuable information upon icthiological subjects generally, with many useful observations in reference to those important fisheries on our Eastern coast, which constitute a nursery for a race of the hardiest sailors in the world. The style, though not exactly that which makes Sir Humphrey Davy's "Salmonia" one of the most attractive volumes extant, is still such as to make the book very readable, and recommend it to those having a less immediate interest in the subject, than the professed sportsman or naturalist. There are occasional marks of haste, however, in the work, which the author's oft repeated excuse of being "hurried through the press," will hardly cover. The most prominent that strikes us is a confusion in the names of places and countries alluded to, in describing the habits of fish. The author, in writing of those fish which frequent the waters of Massachusetts, very naturally and properly alludes continually to those of a similar description which inhabit the lakes and streams of England and other countries. But the similarity of the names of places in New England to those abroad—arising from that miserable usage which prevails all over the Union, of making the cities of Europe stand god-father to the villages of the Atlantic States, and the towns of the Atlantic States again bestow their nomenclature upon the hamlets of the West—diminishes the value of the information conveyed by confounding all geographichal distinctions. An Englishman writing upon subjects of natural history in this country, might very properly allude to places in his own without specifying in what land they were found; but an American, writing for his countrymen, should never make these foreign references without adding something to show that he has shifted the scene of his observations to other climes than ours.

This defect is however as common in most American writers, from the paragraph makers of newspapers up to the compilers of quartos, as if we were still a provincial people, and speaking always of "*home.*" We need hardly add, that the ridiculous poverty of invention, or want of taste, in not adopting the Indian names of places, displayed in the nomenclature of half the natural and artificial objects of interest in the country, is likely to keep up the confusion for ages. Another defect in Dr. Smith's book—and more important, because less expected—is the want of an *index*—a mere mechanical appurtenance, it is true, but still one not readily dispensed with in a work of this kind. With these two, as some will think, trivial blemishes, which can be readily remedied in a future edition, the work contains enough useful and entertaining matter, displayed in a very modest manner, to make us take pleasure in recommending it. We quote as follows: *

Ferocity of the White Shark.

The white shark, in his wide, dilatable jaws, has six rows of sharp, triangular teeth, which can be raised or depressed by appropriate muscles, at pleasure. Its velocity is such, that nothing seems to be able to escape, and its greediness is never satisfied. By one gripe of the jaws, they can cut a man in two. A red hot cannon ball is sometimes lowered over the side to one of these disagreeable followers of a ship, which the seaman has the satisfaction of seeing the shark receive into his yawning throat.

At the pearl fisheries of South America, where white sharks are numerous, visiting the mighty caverns in the rocks, the water being so clear that a small object may be seen at considerable distance, the divers, familiar with the character of the monster are obliged to go armed in self defence. For this purpose, some carry a long sharpe knife. As the shark's mouth is placed somewhat under the head, he endeavors to get over his intended victim, and if he discovers no disposition in the Indian to move, gently settles down over him with his horrible mouth widely extended. With the coolness of a philosopher, the instant he is near enough to be reached, the diver plunges the knife into his vitals. A very ingenious mode which is practised, says a writer, from whom these observations have been principally extracted, is for the diver to carry down with him four or five hard wood sticks, about two feet long, sharpened at both ends. In case he is likely to be disturbed in his search for the oyster, by the visit of this king of sharks, he thrusts one of the sticks between his jaws, as he is in the act of closing them. This props them asunder, and the force with which they are brought to act on the stick, securely pins both ends into the bones, and away he goes, without the possibility of a remedy. Instances have been known of an Indian, who was so sharply set upon, that he gave away three sticks in succession, before quitting his dangerous post.

At the Marquesas Islands, where this shark abounds, the natives swim in the midst of them quite fearlessly; and the only reason why more of them are not devoured, must be the peculiar ease with which they are supplied with large fish. Whenever, however, a native is so unhappy as to be caught by one of them, his associate never exert themselves in the least, to extricate him' because it is a common matter of belief there, that sharks never seize any but the wicked—or transgressors of law, and therefore the men deserves to die.

A gentleman of our acquaintance informed us that he saw a young girl swimming from a Boston vessel, waiting to receive a cargo of sandal wood, with a heavy bar of iron on her shoulder, which she had contrived to steal from the deck. She swam under water a considerable distance, before coming up for breath, but the moment she was seen, the boats put off, with the expectation of recovering the bar.

Just as the boats were so near that she was fearful of being struck with an oar, which was raised by a man in the bow, she plunged a second time—the boats pursued the track, but as she came up to the surface, still holding the iron, a "*mighty white shark* swallowed her at one effort;—the velocity towards his object being so great, that as he rolled upward, he girl was driven down his throat."

Curious Migration of Eels.

An annual migration of young eels also takes place in the river Thames in the month of May; and they have generally made their appearance at Kingston, in their way upwards, about the second week in that month, and accident, has so determined it, that for several years together it was remarked that the tenth of May was the day of what the fishermen call eel fair; but they have been more irregular in their proceedings since the interruption of the lock at Teddington. These young eels are about two inches in length, and they make their approach in one regular and undiviating column of about five inches in breadth, and as thick together as it is possible for them to be. As the procession generally lasts two or three days, and as they appear to move at the rate of nearly two miles and a half an hour, some idea may be formed of their enormous number. The line of march is almost universally confined to one bank of the river, and not on both sides at the same time; but, from some instinctive or capricious impulse, they will cross the river, and change the side without any apparent reason for doing so.

When the column arrives at the entrance of a tributary stream which emptes itself into the river, a certain portion of the column will continue to progress up the tributary stream, and the main phalanx either cross the river to the opposite bank, or will, after a stiff struggle to oppose the force of the tributary branch in its emptying process, cross the mouth of this estuary, and regain its original line of march on the same side of the river. In consequence of the young eels dispersing themselves from time to time, as occasion offers, in the manner above described, the shoal must imperceptibly lessen until the whole have disposed of themselves in different places.

TRAVELS OF AN IRISH GENTLEMAN IN SEARCH OF A RELIGION, with notes and illustrations, by the Editor of Captain Rock's Memoirs: Philadelphia, *Carey & Lea*; 1 vol. 18mo.—There is nothing surprizing in the fact, of the author of "Little's Poems" turning saint in his older days, and making up, by glorifying "the fathers," in his mature years, for the harm he may have done the daughters in his youth;—though what could have set Tom Moore to work upon such a subject as this we cannot divine, unless it be that he is merely "working up his old iron," by writing out a saleable volume from the notes he may have made years since, in the course of his study of other subjects. At all events, the result is before us in a very singular production—a most learned and ingenious vindication of the Roman Catholic faith,—fraught with the most plausible reasoning, and displaying a degree of curious research, that would have been far from contemptible in the most plodding days of the Dutch bibliographers; and which, in this surface-skimming age, is really prodigious. This great array of authority, however, will not go for much with those who dissent from Mr. Moore in his main proposition, of the propriety of keeping the very foundation of our faith, the Bible, a sealed book from THE PEOPLE. For the rest, having already extracted the most inviting passages of the book—the Poetical Translations of the Fathers, published on the outside of our paper a day or two since—we leave it for our readers to examine the graver parts for themselves.

FOREIGN INTELLIGENCE.

The latest accounts from Portugal, were by an arrival at Liverpool on the 8th June, bringing three offcers from Don Pedro's army.

The accounts from Oporto, says the Liverpool Mercury, are by no means favourable to the cause of Donna Maria: the army only consisting of 10,000 strong, and not in high spirits; their disaffection is more on account of their contracts of pay not being discharged, than of the hardships of a city in a state of seige. Whether it be a lack of money on the part of the government of Don Pedro, or wilfully held from the troops, is not known. Out of the English troops, there at present remains only 1000, and about 1500 French, all of whom would gladly return to their respective countries, were it possible. Admiral Sartorious is laying off the bar. Don Miguel's squadron is reported to be out, and well refitted.

On the 27th, M. Joly's extensive spinning mills, at St. Quentin, were destroyed by fire, together with all its engines, machinery, and stores of every description. Three offices in Paris had insurance on the premises, amounting to 600,000 francs.

The infant Don Carlos and his family had taken passage at Lisbon, on board a British frigate for Cevitta Vecchia, to avoid the cholera, which was spreading through all parts of Portugal.

Ibrahim Pacha had been ordered by the Viceroy of Egypt to retire, on the 9th May, immediately, with all his army, behind the Taurus.

The revolt against the Sultan of Constantinople had become general and formidable in Bosnia and Albania. The Turkish officers had been deprived of their offices and employments. The Greeks of Verevia and Greneva were also in open rebellion to the Turkish government.

An insurrection had broken out in Italy, having for its object a republican government. Avignon, Grenoble, and Lyons were the cities most excited. The centre of operations was to be Chambery, and the revolutionists were to be assisted by the refugee Poles. The whole were to act simultaneously on the Sardinian States, France, and the French parts of Switzerland.

The Duc de Rovigo (Savary) died at Paris, on Monday last, of cancer in the tongue. On the same day, the editor of the *Tribune* was tried before the Cour d'Assizes for a new alleged seditious libel, but was acquetted.

The departure of the Duchess of Berry for Palermo was expected to take place on Wednesday.

At Amiens, on the 23d May, a disturbance broke out, in consequence of an order given by the Archbishop, to remove the rector of a parish, who had been denounced to him. The populace became enraged at the order, and resisted it. The National Guards interfered, but were overcome. Afterwards twelve of the ringleaders were secured.

Sir Stratford Canning arrived at Paris from Madrid, on his way to London, on Monday last. At the date of his departure from the Spanish capital every thing was tranquil there.

Bank of England.—On the 31st May, Lord Althorp, in a Committee on the Bank Charter Act, proposed a series of resolutions, embodying the arrangement with the Bank, and the regulation of Banking Companies, which he prefaced by a speech of considerable length. The resolutions were ordered to be printed, but no vote was taken upon them. The leading features of the arrangement are, that the charter shall be renewed for 21 years, an option being reserved to Government to put an end to it after the expiration of 10 years, on a year's notice—that no banking company of more than six partners shall issue notes in the metropolis or within 65 miles of it, but banks of more than six partners at a greater distance may draw bills on London to any amount, and issue notes payable in London—that the Bank of England notes shall be a legal tender for debts above the value of 5*l.* and the notes of the Bank shall not be payable in gold except at the Bank of England and its branches—that bills having not more than three months to run, shall not be subject to the Usury Laws—that a weekly account similar to that laid before the Committee, stating that the amount of bullion in the Bank, and the notes in circulation, shall be furnished weekly to the Government, which is to be considered confidential; but the average of these accounts, at the end of the quarter, shall be published in the succeeding quarter in the Gazette; and that a bill shall be introduced into Parliament to regulate Country Banks, and to encourage Joint Stock Banking Companies in the country to issue Bank of England notes. A fourth part of the sum lent by the Bank to Government is to be paid off, and the charge for the management of the public debt to be reduced from 245,000*l.* to 120,000*l.*

The Times of the 7th June, after giving the debates on this subject adds—The presumed conclusion of the arrangement with the Bank has produced great activety in the money market, and, in fact, throughout the whole range of commercial operations, which proves more strongly than all the argument in the world could do, that its natural tendency is conceived to be that of increasing the circulation and raising prices of every description. Consols for the account left off at 90 3-4 to 7-8; Bank Stock 204 to 205; and Exchequer Bills at 50 to 51s. premium.

By the U. S. ship St. Louis, the editors of the Gazette have received the following from their correspondent, dated

"*Pt. Arenas, May* May 25, 1833.

"Gentlemen—our accounts from Lima are to the 4th May; all was quiet, although an attempt had been made towards a revolution, but was suppressed by sending out of the country the president of the senate, and imprisoning some half dozen more.

"In Central America, the political horizen is darkened, and the country rent into some dozen parties. In Nicaragua, the civil war is raging to a great extent. The chief, Herrera, is in Leon, and has with him some 600 troops. In Grenada, Monagua, and all the towns in the province, troops are raising to attack him. What will be the end, God knows; but we have no prospect of a speedy termination.—Guatemala is in trouble, as well as San Salvader.—The indigo crops are abandoned."—[Gazette.]

SUMMARY.

The extreme heat of Monday, when the thermometer stood at 92° in the shade, at 3 P. M. was thought by many to give a show of reason to the extravagant suggestion made a day or two since in a morning paper, that Mr. Holt had bored through the outer crust of the earth; and it was rumored about town that those internal fires, which, according to Cuvier, Nature keeps ever burning in her smithery below, were flaming up through the aperture at a rate that threatened soon to make grilled meat of every man who had not Monsier Chabert's anti-cooking specific in his pocket. The alarm, of course, was not slight: people moved about, wan and haggard, while briny bitter drops were seen to bedew many a manly countenance. It was, in short, a scene befitting the pen alone which described Byron's "Darkness:"

> Men did glare upon each other with eyes,
> Whose hot and fever'd glances seemed
> From the red bosom of a furnace shot.
> Some by the windless window stood and tried,
> Tried vainly there to catch the breeze that came not;
> Some gasping sank beneath the scorching sighs
> Their panting comrades heaved. Some called for ice;
> For juleps some. Some calmly dripping stood,
> Then homeward hurried and their linen changed—
> Changed frequently, yet ever dripped anew.
> And figures strange of fiery uncouth mein,
> With sagging habil'ments were frequent seen;
> And features, forms, and fashions, all were changed—
> Mingled and changed-like molten scrap-iron,—blended:
> Men to primeval modes returned, and these
> Moved hatless, stockless, vestless, coatless all.

THE REVENUE.—According to the data which have been furnished by the returns of revenue accrued at some of the principal ports during the first half of the present year, there seems to be a diminution of about *one third* as compared with the revenue which accrued during the same period in 1832. This is owing to the repeal or reduction of duties under the new Acts of Congress, and not to any falling off in the amount of importations. But notwithstanding the diminution of duties *accruing* the present year, it would not be surprizing if the actual *receipts* should be equal to those of 1832. For in the first place a considerable part of the duties which *accrued* in 1832, are *payable* in the present year, and in the second place, the introduction of cash duties and short credits under the new laws, will throw a larger amount of *payments* into the present year than of right belongs to it. The receipts last year from customs were $24,224,441 77. The expenses of government will not exceed $14,000,000. Consequently if the receipts of the present year shall equal those of 1832, there will be a surplus of more than $10,000,000; which added to the balance in the Treasury at the commencement of the year, ($4,502,914 45,) and $4,000,000 from public lands and other sources, will give a total surplus of more than $18,000,000. Deduct $7,001,698 83, the amount of the national debt at the beginning of the year, and there will be a clear balance of about $11,000,000 which Congress will not know what to do with. If we had the control of uncle Sam's purse strings, we would, with the consent of the Southern States, apply this sum to the gradual extinction of slavery. Next year the actual receipts from customs will not probably exceed $15,000,000 or $16,000,000.—[Journal of Commerce.]

The standard weight for merchantable wheat this season, has been fixed by the city millers of Richmond, Virginia, at 58 lbs the bushel. Last season it was 60, and half the crop weighed 61.

Pears.—Pears may be grafted on stocks of the Mountain Ash and the Service Tree; both of which will grow and thrive where pear tree stock would not. I have also seen apples grafted on quince stocks, and planted in a soil so wet that an apple could not live; but they are doing very well, and making exceedingly fine shoots.—[Rusticus in Urbe.]

The People of Michigan, it would seem, are extremely hostile to General Black Hawk and his companions. The officer having them in charge, on his arrival at Detroit, deemed it expedient to procure a body guard, to protect them in the progress of their journey westward. His Excellency the General in-Chief, was even burnt in effigy at Detroit. That those people who have themselves been sufferers in the late conflict with the Indians, or those whose friends have suffered, should feel somewhat sensitive on the appearance of Black Hawk and the Prophet among them is not very strange; yet, we think it was at least imprudent and impolitic thus to manifest their disposition on the occasion.—[Conneaut Gazette.]

By the steam ship David Brown, Capt. Penoyer, we have Charleston papers of the 20th, three days in anticipation of the mail. With regard to the injury to the boiler, said to have been sustained on her outward passage, we are informed by Captain Penoyer that it was not as serious as at first apprehended. The alarm arose from the apparent *strain* of a rivet, which, however, proved, on examining it, very little if at all injured.

In the Charleston Patriot, of 20th inst. is a card from the passengers who remained on board the *David Brown* during her detention for repairs at Beaufort, in which they speak in the warmest terms of the kind and gentlemanly treatment received during the whole time, from Capt. Penoyer and his officers, and express their undiminished confidence in the safety and excellence of the *David Brown*, as a packet.

Extract of a letter, received in this city.

"Camden, July 16.—We are glad to say that the prospects of our planters are very good for large crops of Cotton, and we believe it will come into market sooner than ever before known. Cotton will be sold in Camden in August."—[Charleston Courier.]

Lost Mail Found.—We learn from the Post Office in this city, that the Mail from New Brunswick (New Jersey) which has been missing for two or three weeks, and for which a reward was offered, was, received at our post office by the southern mail this morning. It appears from the Post Bill that this mail had been received at the Post Office in Cincinnati, (Ohio,) whence it was sent to the Post Office of this city, where it should have arrived on the 6th inst.—It is fortunate that this mail has been found, as it exonerates several persons from unjust suspicions. We are informed that a considerable sum of money has also been saved; that one letter contained $700, and others checks, &c. to the amount of more than $2,000.—[Post.]

Extraordinary Mortality.—We have been informed, says the Richmond Compiler, that on an estate of Gen. Wade Hampton, on the Mississippi, a little above New Orleans, out of fifteen hundred slaves, more than seven hundred have been destroyed by Cholera.

Rutgers College.—The annual commencement of this Institution was held at N. B. on the 17th inst. when the degree of A. B. was conferred on—Garrett B. Adrain, Nicholas G. Blauvelt, G. Schenck Cannon, John H. Carothers, John Chetwood, James D'La Vergue, John Demott, Abraham D. Deyaw, John Dickinson, J. Wilson Drury, John P. Garrisk, James R. Hardenberg, John Hopper, Daniel Michel, Fred'k Ogilby, Robert H. Pruyn, Peter J. Quick, William Reily, B. Dubois Smock, Jacob P. Stryker, William H. Tallmadge, H. Hart, E. Waring.

The degree of A. M. was conferred upon seventeen gentlemen, Alumni of the College, and that of D. D. upon Rev. Messrs. Gosman and McCarrel.

Melancholy.—The stage on the Syracuse and Watertown line in passing from Adams to this place was upset on the night of the 11th instant, and the driver Rensseaer Nash, almost instantly killed. When the stage upset, Mr. Nash was thrown from the box and caught under the body of the falling coach. He spoke to a lad of about fifteen, the only passenger on board, inquiring if he was able to run, and requested him to hasten for assistance, stating that he must die, but before assistance could be rendered, he expired. Mr. Nash is said to be about 28 years of age; of correct moral character, esteemed and worthy.—[Watertown Freeman.]

Unprecedented Dispatch.—The steamboat New-Philadelphia, Capt. G. N. Diehl, attached to the Rail-Road Line between Philadelphia and this city, left the wharf, at half past 3 A. M. on Thursday last, for Philadelphia, to take her station on the line from that city to Bordentown. She arrived at Chesnut st. wharf at half past 10 o'clock the same evening, having performed the passage at least two hundred and sixty-miles, in nineteen hours!—[Daily Advertiser.]

It will be seen by the Inspector's report that the number of deaths in this city during the last week was 149; a larger number than has occurred before in any one week since Cholera times. There is however no prevailing disease, nor is the number of deaths greater than usual at this season of the year. In the corresponding week of 1832, the number of deaths was EIGHT HUNDRED AND SEVENTY-NINE, of which 686 were Malignant Cholera.—[Jour. Com.]

Accident by sparks from the chimney of a Steamboat.—A man was shockingly burnt on board a small skiff at Fulton slip, on Saturday morning, by the explosion of four or five pounds of gunpowder, which he was in the act of placing under cover, when it took fire by a spark from the chimney of a steamboat, which fell upon it and caused the accident.—[Mercantile Advertiser.]

Mr. E. A. G. Young of New Castle, in Delaware, announces that he has discovered a method of effectually preventing the emission of sparks from the chimneys of Locomotive Engines, for which he has obtained a patent. Mr. T. Stockton, a director of the New Castle and Frenchtown Rail Road, certifies that the invention has been in use for about three weeks, on that road, on a Locomotive in which wood is used for fuel, that it has been very satisfactory to the Directors, and is believed by them to be effectual in stopping the sparks.

We learn by a letter from Fort Winnebago, dated 25th June, that the Indian murderers of *Felix St. Vrain* and others, have been again delivered up to the authorities of that post, by their nation. It will be recollected that they escaped from the guard house at Fort Winnebago some time last fall. It is further said that they will be sent to Green Bay, in a few days, to take their trial. Col. Dodge was at Fort Winnebago, but was likely to remain there only a short time.—[St. Louis Republican.]

[*From the Charleston Courier.*]

Loss of a Steamboat.—The steamboat *Bonnets of Blue*, Captain Davis, sailed from Savannah 15th ult. bound to Mobile. On the 24th, when about 40 miles S. E. by S. from St. Augustine, it commenced blowing a gale from N. N. E. during which the boat broached to, and would not steer. Soon after, the boat was found to be leaking badly, and the pumps became choaked—the leak gaining fast, the square sail was taken in, and both anchors let go in 15 fathoms water, and all hands employed in bailing. Finding it impossible to keep her free, slipt the chain, cut the hawser, and set the square sail, for the purpose of driving the boat on shore—at the same commenced lightening her by throwing the wood overboard. At half past 4 A. M. finding she was sinking, ordered the boat to be got ready when Capt. Davis, lady and two children, Messrs. Kennedy and Blissett, passengers, and all the crew, (with the exception of two negroes, which the boat being small, it was found impossible to take on board,) embarked. A short time after the boat left the wreck, she sunk, One of the negroes reached the shore on a piece of the wreck; the other was unfortunately drowned in the surf. The boat landed at Buryaville, on the coast of Florida, and proceeded on the following day to St. Augustine. The wreck of the steamboat drove on shore, and went to pieces, the engine having fallen out of her, when she sunk and rolled over. Captain Davis and family arrived in this city on Saturday, in the schooner *Agnes*, from St. Augustine.

We regret to learn from the Harrisburg Reporter, that General Solomon G. Krepps, for several years past a member of the State Senate, died of cholera at his residence in Brownsville, a few days since.—He had been at Pittsburg, where it is supposed he contracted the disease. Gen. Krepps was one of the ablest members of the Senate—was beloved and respected by all who enjoyed his acquaintance—and his death will be deplored by all who knew him.—[Philadelphia Inquirer.]

[*From the Pennsylvanian.*]

We have procured from the Collector of this port the following statement of the duties accruing at Philadelphia:—

The first quarter 1833 was .	$797,316 23
Second " " . .	525,456 00
	1,322,772 23
First quarter 1832 . . .	1,332,479 93
Second " "	977,698 56
	2,310,178 49

Railroad Accident.—We learn that yesterday, whilst the locomotive with a train of cars was passing on the Schenectady and Saratoga rail-road near Ballston, it came in contact with a cow, which had run upon the track. The locomotive passed over the cow and was thrown off the track with considerable damage: the next adjoining car passed over the cow, but held on the track: the other cars were thrown off the track, and the passengers more or less injured, but none seriously.—[Albany Argus.]

Indian News.—Col. Henry Dodge, of Dragoons, with two companies of Rangers (Captains Backus and Browne's) commenced his march towards the rapids on Rock River last Sunday for the purpose of dislodging *Maneater's* band of Winnebagoes. It appears that this chief, after all that has been done and said on the subject, is still lurking about the rapids with his band amidst the thick forests and swamps of that country. The other Indians we are informed have crossed the Wisconsin according to the stipulations of the treaty of last fall.

Col. Dodge is ordered to demand the murderers who escaped from the prison at Fort Winnebago last fall, and now are thought to be skulking about in *Maneater's* band. This demand certainly will be made, and when made, must, and of course, will, be persisted in till they are given up. Whether any resistance will be made or not we expect to be able to inform our readers in our next number.—[Galenian.]

Singular Phenomenon.—A pond in the vicinity of Providence, whose water has heretofore been unusually pure and limpid, has, within a few days past, assumed a thick milky appearance. The change remains unaccounted for.—[Hartford Review.]

The Pawtucket Chronicle says:—A pond situated 4 miles from this village, in the town of Smithfield, has lately assumed a novel appearance, which at first alarmed many superstitious persons. That a body of water more than half a mile in extent, should undergo a rapid change, from its natural hue to a milk white, was announced with many trepidations. But the great wonder ceased on the discovery of the innumerable white animaculæ produced by the stagnant water or putrid animal matter.

John Paul Jones.—The sailing master on board the Bon Homme Richard, commanded by the celebrated Paul Jones, is now living at, Brooklyn, L. I. aged about seventy-eight years. His name is Geo. Raymond, who, for many years previous to 1808, was cammander of the merchant ship Citizen. Captain Raymond had been two voyages to India, previous to enlisting under Paul Jones, when he was but 19 years old. He is a native of Norwalk, Connecticut.—[Hempstead (L. I.) Enquirer.]

"*Old Hickory.*"—We have seen *twelve beautiful axes*, from the factory of Alexander Harrison, New Haven, which were presented to General Jackson on his recent visit to that city. They were made by twelve different men in said factory, each doing his best, and are of different models, according to the taste or genies of the workmen. A *hickory* box, varnished, and lined with silk, contains them, in which, after being exhibited a day or two at the Exchange, they are to be conveyed to Washington.

MISCELLANY.

FORMATION OF THE CONSTITUTION.

Judge Story, in his Commentaries on the Constitution of the United States, concludes his remarks upon the decline and fall of the Confederation as follows:—

"Whatever may be thought as to some of these enumerated defects, whether they were radical deficiencies or not, there cannot be a doubt, that others of them went to the very marrow and essence of government. There had been, and in fact then were, different parties in the several states, entertaining opinions hostile, or friendly to the existence of a general government. The former would naturally cling to the state governments with a close and unabated zeal, and deem the least possible delegation of power to the Union sufficient, (if any were to be permitted,) with which it could creep on in a semi-animated state. The latter would as naturally desire, that the powers of the general government should have a real, and not merely a suspended vitality; that it should act, and move, and guide, and not merely totter under its own weight, or sink into a drowsy decrepitude, powerless and palsied. But each party must have felt, that the confederation had at last totally failed, as an effectual instrument of government; that its glory was departed, and its days of labor done; that it stood the shadow of a mighty name; that it was seen only, as a decayed monument of the past, incapable of any enduring record; that the steps of its decline were numbered and finished; and that it was now pausing at the very door of that common sepulchre of the dead, whose inscription is, *Nulla vestigia retrorsum.*

If this language should be thought too figurative to suit the sobriety of historical narration, we might avail ourselves of language as strongly colored, and as desponding, which was at that period wrung from the hearts of our wisest patriots and statesmen. It is, indeed, difficult to overcharge any picture of the gloom and apprehensions, which then pervaded the public councils, as well as the private meditations of the ablest men of the country. We are told by an historian of almost unexampled fidelity and moderation, and himself a witness of these scenes,* that "the confederation was apparently expiring from mere debility. Indeed, its preservation in its actual condition, had it been practicable, was scarcely to be desired. Without the ability to exercise them, it withheld from the states powers, which are essential to their sovereignty. The last hope of its friends having been destroyed, the vital necessity of some measure, which might prevent the separation of the integral parts, of which the American empire was composed, became apparent, even to those who had been unwilling to perceive it."

In the next chapter, the learned judge proceeds to give the following account of the formation of the Constitution of the United States:

Origin and Adoption of the Constitution.

In this state of things, commissioners were appointed by the Legislatures of Virginia and Maryland early in 1785, to form a compact relative to the navigation of the rivers Potomac and Pocomoke, and the Chesapeake Bay. The commissioners having met in March, in that year, felt the want of more enlarged powers, and particularly of powers to provide for a local naval force, and a tariff of duties upon imports. Upon receiving their recommendation, the legislature of Virginia passed a resolution, for laying the subject of a tariff before all the States composing the Union. Soon afterwards, in January, 1786, the legislature adopted another resolution, appointing commissioners, "who were to meet such as might be appointed by the other States in the Union, at a time and place to be agreed on, to take into consideration the trade of the United States; to examine the relative situation and trade of the States; to consider how far a uniform system in their commercial relations may be necessary to their common interest, and their permanent harmony; and to report to the several states such an act, relative to this great object, as, when unanimously ratified by them, will enable the United States in congress assembled to provide for the same."

§ 273. These resolutions were communicated to the states, and a convention of commissioners from five states only, viz: New York, New Jersey, Pennsylvania, Delaware and Virginia, met at Annapolis in September, 1786. After discussing the subject, they deemed more ample powers necessary, and as well from this consideration, as because a small number only of the states were represented, they agreed to come to no decision, but to frame a report to be laid before the several states, as well as before Congress. In this report they recommended the appointment of commissioners from all the States, "to meet at Philadelphia, on the second Monday of May, then next, to take into consideration the situation of the United States; to devise such further provisions as shall appear to them necessary, to render the constitution of the federal government adequate to the exigencies of the Union; and to report such an act for that purpose to the United States in Congress assembled, as when agreed to by them, and afterwards confirmed by the legislature of every State, will effectually provide for the same."

§ 274. On receiving this report, the legislature of Virginia passed an act for the appointment of delegates to meet such, as might be appointed by other States at Philadelphia. The report was also received in Congress. But no step was taken, until the legislature of N. York instructed its delegation to move a resolution, recommending to the several States to appoint deputies to meet in convention for the purpose of revising and proposing amendments to the federal constitution. On the 21st of February, 1787, a resolution was accordingly moved and carried in congress, recommending a convention to meet in Philadelphia, on the second Monday of May, ensuing, "for the purpose of revising the articles of confederation, and reporting to congress, and the several legislatures, such alterations and provisions therein, as shall, when agreed to in congress, and confirmed by the States, render the federal constitution adequate to the exigencies of government, and the preservation of the Union." The alarming insurrection then existing in Massachusetts, without doubt, had no small share in producing this result. The report of congress, on that subject, at once demonstrates their fears and their political weakness.

§ 275. At the time and place appointed, the representatives of twelve states assembled. Rhode Island alone declined to appoint any on this mementous occasion. After protracted deliberations, the convention finally adopted the plan of the present constitution, on the 17th of September, 1787; and by a contemporaneous resolution, directed it to be "laid before the United States in congress assembled," and declared their opinion, "that it should afterwards be submitted to a convention of delegates chosen in each state by the *people* thereof, under a recommendation of its legislature for their *assent* and *ratification;*" and that each convention, assenting to, and ratifying the same, should give notice thereof to congress. The convention, by a further resolution, declared their opinion, that as soon as nine states had ratified the constitution, congress should fix a day, on which electors should be appointed by the states, which should have ratified the same, and a day, on which the electors should assemble and vote for the president, and the time and place of commencing proceedings under the constitution; and that after such publication, the electors should be appointed, and the senators and representatives elected. The same resolution contained further recommendations, for the purpose of carrying the constitution into effect.

§ 276. The convention, at the same time, addressed a letter to congress, expounding their reasons for their acts, from which the following extract cannot but be interesting. "It is obviously impracticable (says the address) in the federal government of these states, to secure all rights of independent sovereignty to each, and yet provide for the interest and safety all. Individuals, entering into society, must give up a share of liberty to preserve the rest. The magnitude of the sacrifice must depend, as well on situation and circumstance, as on the object to be obtained. It is at all times difficult to draw with precision the line between those rights, which must be surrendered, and those which may be reserved; and on the present occasion this difficulty was increased by a difference among the several states, as to their situation, extent, habits, and practical interests.—In all our deliberations on this subject, we kept steadily in our view that, which appears to us the greatest interest of every true American, *the consolidation of our Union,* in which is involved our prosperity, felicity, perhaps our national existence. This important consideration, seriously and deeply impressed on our minds, led each state in the convention to be less rigid on points of inferior magnitude, than might have been otherwise expected. And thus *the constitution,* which we now present, is *the result of a spirit of amity, and of that mutual deference and concession,* which the peculiarity of our political situation rendered indispensable."

§ 277. Congress having received the report of the convention, on the 28th of September, 1787, unanimously resolved, "that the said report, with the resolutions and letter accompanying the same, be transmitted to the several legislatures in order to be submitted to a *convention of delegates chosen in each state by the people thereof,* in conformity to the resolves of the convention, made and provided in that case."

§ 278. Conventions in the various states, which had been represented in the general convention, were accordingly called by their respective legislatures: and the constitution having been ratified by eleven out of the twelve states, congress, on the 23d of September, 1788, passed a resolution appointing the first Wednesday in January following, for the choice of electors of president, the first Wednesday of February following, for the assembling of the electors to vote for a president, and the first Wednesday of March following, at the then seat of congress (New York,) the time and place of commencing proceedings under the constitution. Electors were accordingly appointed in the several states, who met and gave their votes for a president; and the other elections for senators and representatives having been duly made, on Wednesday, the 4th of March, 1789, congress assembled under the new constitution, and commenced proceedings under it. But a quorum of both houses, did not assemble until the 6th of April, when the votes for president being counted, it was found that George Washington was unanimously elected president, and John Adams was elected vice president. On the 30th of April, president Washington was sworn into office, and the government then went into full operation in all its departments.

§ 279. North Carolina had not, as yet, ratified the constitution, the first convention called in that state, in Aug. 1788, refused to ratify it without some previous amendments, and a declaration of rights. In a second convention, however, called in November, 1789, this state adopted the constitution. The state of Rhode Island had declined to call a convention; but finally, by a convention held in May, 1790, its assent was obtained; and thus all the thirteen original states became parties to the new government.

§ 280. Thus was achieved another, and still more glorious triumph in the cause of national liberty, than even that, which separated us from the mother country. By it, we fondly trust, that our republican institutions will grow up, and be nurtured into more mature strength and vigour; our independence be secured against usurpation and aggression; our domestic blessings be widely diffused, and generally felt, and our union, as a people, be perpetuated to our own truest glory and support, and as a proud example of a wise and beneficent government, entitled to the respect, if not to the admiration of mankind.

From the Boston Patriot.

On Birds and their Misfortunes.—We have already intimated our opinion, that the labors of the scientific ornithologist are of far more practical utility than the usual observer supposes; and that, even in the business of legislation, a regard to his researches might prevent many errors, which may much affect public welfare. The legislation on the subject of birds has been marked by some essential errors, which have led to real evil. By the law of 1817, woodcocks, snipes, larks and robins, were protected at certain seasons of the year, whilst war to the knife was declared against crows, black-birds, owls, blue jays, and hawks; these last were treated as a sort of pirates, subject to a suspension at the yard arm, with the least possible ceremony. It so happens, that the character of these very birds has been singularly mistaken: for while the ordinance of legislation has been thus systematically levelled at them, they, on a principle which man would do extremely well to imitate, have been returning good for evil; they have been diligently engaged in extirpating all sorts of vermin, while never were the vilest vermin half so ill treated by the human race. The crow for example, who is generally regarded as a most suspicious character, has had great injustice done him; in the spring, when the ground is moist, he lives in a state of the most triumphant luxury on grubs; he eats the young corn, it is true, but it is a necessary of life, to which he never resorts, except when his supply of animal food is shortened. After the corn is tolerably grown, he has nothing more to do with it; and in any stage he destroys at least five hundred pernicious grubs and insects, for every blade of corn which he pillages from man. In the southern States, he is regularly permitted to accompany the ploughman, and collect the grubs from the newly opened furrow; his life is thus secured from the safest of all tenures—that of the interest of man in permitting him to live.

There is scarcely a farm in England, without its rookery; the humid atmosphere multiplies every species of insect, and these birds reward man for his forbearance, by ridding him of legions of his foes. By a policy very similar to that which dictated the revocation of the edict of Nantes, they have occasionally been exposed to the mischievous propensities of unruly boys, who, as far as utility is concerned, are not to be compared to crows; but the error of this step soon became obvious, and they are now received with universal welcome. The hawk enjoys a double reputation in the hen-roost; he sometimes destroys the chickens, but with man's consistency, does not like to see his infirmities copied by another; and by way of compensation demolishes the fox, which eats twenty chickens where he eats but one: so that it is hardly the part of wisdom to set a price upon his head, while the fox, a hardened knave, is not honored with a penal statute. How the owl came to be included in this black list, it is difficult to conjecture; he is a grave, reflecting bird, who has nothing to do with man, except to benefit him, by eating weazles, foxes, racoons, rats and mice, a sin for which most house-keepers will readily forgive him. In some parts of Europe, he is kept in families, like a cat, whom he equals in patience and surpasses in alertness. Another of these birds, the blackbird, is the avowed enemy of grubs, like the crow: in the middle States, the farmer too well knows the value of his company, to pluck them from the furrow; and while other less pains-taking birds collect the vermin from the surface, his investigations are more profound, and he digs to the depth of several inches in order to discover them. When the insects are no longer to be found, he eats the corn, as well he may, but even then asks only a moderate compensation for his former services; five hundred black-birds do less injury to the corn, than a single squirrel. The last upon the catalogue of persecuted birds, is the blue jay. Whoever watches him in the garden, will see him descend instantly from the trees, pouncing every time upon the grub, his enemy and ours.

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* Marshal's Life of Washington, 194.

We have already seen that the act to which we have referred protects some birds at certain seasons of the year; among others, the robin, who lives on insects and worms, and has no taste for vegetable diet, and the lark who is extremely useful in his way. The only wonder is, that it should have been thought expedient to allow them to be shot in any season. The quail, another of the privileged class, has no title to be named in company with the others; in the planting time, he makes more havoc than a regiment of crows, without atoning for his misdeeds by demolishing a single grub. Nor is the partridge a more scrupulous inspector of the rights of property; though as he lives in comparative retirement, he succeeds in preserving a name for honesty.

There are some of our most familiar birds, of which a word may be here said. Every body has seen the little goldfinch on the thistle by the wayside, and wondered perhaps that his taste led him to so thorny a luxury; but he is all this time engaged in devouring the seeds, which but for him would overrun the ground of every farmer. Even the bob-o'link, a most conceited coxcomb, who steals with all imaginary grace, destroys millions of the insects that annoy the farmer most. All the little birds, in fact, which are seen about the blossoms of the trees, are doing us the same service in their own way.

Perhaps there is no bird which is considered more decidedly wanting in principle than the wood-pecker—and, certainly, so far as man is concerned, there is none more conscientious. So long as a dead tree can be found for a nest, he will not trouble himself to bore into a living one; whatever wounds he makes upon the living are considered by foreign gardeners as an advantage to the tree. The sound tree is not the object—he is in pursuit of insects and their larvæ. In South Carolina and Georgia, forests of a vast extent have been destroyed by an insect, which would seem as capable of lifting a tree as destroying it.—The people were alarmed by the visitation, and sagaciously laid the mischief at the door of the wood-pecker, until they had confounded the bailiff with the rogue.

The injury arising from the loss of a single crop is hardly to be estimated. The experience which is taught by our own misfortune, is very dearly bought; and if we think how we can derive it from others—if, for example, we can learn from the ornithologist the means of preventing such injury, as in many instances we may, the dictates of economy combine with those of taste, and warn us not to neglect the result of his researches.

Solitude in Old Age.—As to myself, I have had my full share of the world—a busy share from fifteen to fifty. I should want taste, did I not now enjoy that variety in life which I gain by solitude. Still a medium has ever been wanting, both in my public and private life, to give a zest of true enjoyment. I had thirty-five years of perpetual crowd and bustle. I have now had five of almost continual loneliness and quiet. * * * Now do not suppose you can alarm me by representing this state of apathy as a calamity. It is the blessing for old age; it is the substitute for patience. It permits me to look in the glass without screaming with horror—and to live upon moderate terms of charity with all young people, (without much hatred or malice,) although I can never be young again.—[Memoirs of Mrs. Inchbald.]

POETRY.

[We should be happy to hear more often from the fair writer of the following simple and pathetic lines, which breathe the tenderness of a sister's affection, animated by a Christian's hope.]

FOR THE N. Y. AMERICAN.

TO ——— ———.

Why does the rose fade on thy cheek,
  And care sit on thy brow,
Those once bright eyes, why do they speak
  Such mournful language now?
In other days it was not so,
  It was not thus with thee;
There was no sign of heartfelt wo,
  All was hilarity.

Thy cheeks were like the ruddy morn,
  Thy eyes were sparkling bright;
The social hour thou didst adorn,
  And every heart delight:
Thy feet did tread the flowery vale,
  Or trip the dance along,
And oft thou dist the ear regale
  With thy soft winning song.

But now it is not so with thee,
  Some evil secret power
Has bound the heart which was so free,
  Has nipt the blooming flower;
I read it in thy wan blanch'd cheek,
  Thy fading beauties prove,
Thy languid eyes,—all, all do speak
  'Tis *unrequited love.*

And did he whom thy guileless heart
  Did love, alas! too true,
Who said that nought but death should part,
  Did *he* forsake thee too?
Oh did the cruel spoiler come,
  A fiend in virtue's form,
To desolate thy happy home,
  To leave thy breast forlorn.

Though man is false, yet God is just,
  Then raise thy fading eye
To Him, whose *love* thou sure canst trust,
  And on *His word* rely;
The Friend who never will forsake,
  Who ne'er will faithless prove,
"The bruised reed he will not break,"
  Nor disregard thy love.

New York, July 15, 1833. F. S. G.

[*From the Edinburgh Literary Journal.*]

PRAYER.

Go, when the morning shineth,—
  Go, when the moon is bright,—
Go, when the eve declineth,—
  Go, in the hush of night;
Go with pure mind and feeling,
  Fling earthly thoughts away,
And, in thy chamber kneeling,
  Do thou in secret pray.

Remember all who love thee,
  All who are loved by thee;
Pray for those who hate thee,
  If any such there be;
Then for thyself in meekness,
  A blessing humbly claim,
And link with each petition
  Thy great Redeemer's name.

Or if 'tis e'er denied thee
  In solitude to pray,
Should holy thoughts come o'er thee,
  When friends are round thy way,
E'en then the silent breathing
  Of thy spirit raised above,
Will reach his throne of glory,
  Who is Mercy, Truth, and Love.

Oh! not a joy or blessing,
  With this, can we compare—
The power that he hath given us
  To pour our souls in prayer.
Whene'er thou pinest in sadness,
  Before his foootstool fall,
And remember, in thy gladness,
  His grace who gave thee all.

TO DIRECTORS OF RAILWAY COMPANIES AND OTHER WORKS.

☞ An Engineer lately from England, where he has been employed in the location and execution of the principal railways in that country, wishes to engage with some company in the United States.

From his practical knowledge of the various kinds of motive power, both of stationary and locomotive engines, also the construction of railway carriages of many descriptions, he has no doubt that he would prove of efficient service to any company having works now in progress.

Letters addressed to W. E. G. 35 Wall street, or to the care of Wm. & F. Jacquee, 90 South street, will be punctually attended to. Most satisfactory reference can be given. m11tf

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

☞ GRACIE, PRIME & CO. offer for sale, at 22 Broad street—

2 cases Gum Arabic
20 do. Danish Smalts, EFFF
10 do. Saxon do. do } Reduced Duty
100 bags Saltpetre
2 do Gall Nuts; 20 tons Old Lead
100 do. Trieste Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do. Dry St. Peray; 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
80 do. Molleres Almonds
148 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 8-4 and 6-4 colored and black Merinos
15 do. 5-8 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
4 do. White Quiltings
10 do. Borrie's Patent Thread, No. 22 and 25
10 do Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
26 bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35, 21½x36, 21x34½, 25x36, 26x37, 29x41, 27x38½, 24x38, 24x20, 24x28, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.
5 cases each 1600 Sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
3 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do do do Red do Gold do
2 do do do White do Silver do. A30

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

pulated, I cannot but hope that an adequate number of hands will be procured in so short a time as to insure the completion of the whole by the time promised.

They are now, as they assure me, in expectation of fully doubling their force in a very short time; should they not be disappointed in their expectations, this force, with what they could get during July and August, from planters along the line, would be sufficient to complete the contract. The road to the county line must, in any event, be finished by the 1st day of June next. Relying upon these favorable anticipations, the following prospects are presented, viz.: That the Company will have 10⅓ miles of the road in operation by the first day of June next—exclusive of the Tuscumbia Railway, 2⅒ miles—and that by the first of December there will be 22.834 miles finished; add the Tuscumbia Railway, 2⅒ miles, makes 24.934; or, say 25 miles, of their work completed in a little less than two years from the date of their charter. The affairs of the Company will then present a very different aspect. The expectations of the stockholders of an active and profitable business will be realized, and the whole community, many of whom are now opposed to the work, discovering that their facilities are much enhanced, will laud the enterprize. The following is given as an approximate estimate of the business upon the road, and the profits arising, when finished, to the town of Courtland.

Assuming that there will be conveyed from the points named to the Depot, at the termination of the Railroad, and up freight, as stated below.

From what point	No. bales.	Miles conveyed.	No. bales conv'd 1 mile
Tuscumbia, say	4,000	2	8,000
Capt. Lewis'	1,000	6	6,000
Fish Pond,	1,000	8½	8,500
County Line,	4,000	12	48,000
Town Creek,	2,000	17	34,000
Foster's,	1,000	20¾	20,750
Courtland,	10,000	25	250,000
	23,000		375,250

Now, 375,250 bales, carried one mile, at 2 cents, - -	$7,505 00
500 tons other freight, at $2 50,	1,250 00
6,000 tons up freight, at $3 00,	18,000 00
Shipping commissions on 23,000 bales, at 25 cents, - -	5,750 00
United States' mail, - -	1,000 00
	$33,505 00

The cost of the roads amounts to	$102,313 49
Depot at the river, say - -	7,000 00
Intermediate depots	1,500 00
	$110,813 49

and $33,505 profit upon $110,813 49, is equal to 30¼ per cent. nearly. Passengers, it is calculated, will pay the expense of conveyance, and repairs of the road. That this source is adequate, will be seen from the following: Suppose an average of ten passengers, at one dollar each, shall be carried up, and the same down, for 312 days in the year, say 312×10×2=6,240. Now, supposing that the locomotive engine shall be used as the motive power, the expense will be at the rate of 43.100 of a cent per ton a mile, as was illustrated in my communication to your Board, dated 13th ult., a copy of which is hereto annexed and referred to, marked E. This calculation was founded on the period at which the power would be employed to the extent of its capacity; and therefore the most favorable result is derived, and the present estimate is presented for the business of the whole year, and consequently an allowance is due on account of the fluctuations that must occur.

In order, then, to make an ample provision on the above account, we will estimate the expense at ¾ of a cent per ton a mile; now, 375,250 bales one mile÷5 (the number of bales to make a ton)=75,050 tons one mile, and 6,000+500×25 miles=162,500 tons one mile; then 75,050+162,500=237,550 tons, at ¾ of a cent, is equal to $1781 62½, expense of conveyance. Estimating the repairs of the road at $100 per mile per annum, which is 100×25=2,000, and 2,500+1781 62=4281 62, and 6240—4281 62=1958 38, surplus; which shows that should there be but seven passengers instead of ten each way daily, the expense of conveyance would be paid. The expense of the agencies and depositories will be more than paid for from the commissions received for receiving and forwarding goods, as the following will show: say 6,000 tons up freight=13,440,000 lbs. at an average of 6¼ cents per 100 lbs. is $8,400. I have no data by which I can determine the actual expense of this part of the business, but should say the above is certainly more than sufficient. Now, if this assumed amount of business be correct—of which your Board are the better judges—then there must be a reduction in the rates, in order that the restriction in your charter may be complied with. No estimate can at this time be made with absolute certainly, and the amount of business upon this road must remain a desideratum, until practical data shall be derived from experience. But this conclusion cannot be resisted, that the Company will be enabled to realize a profit fully up to the limits of their charter, viz.: 25 per cent. per annum. It is difficult to state the amount, or indeed to set a limit to the business when the road shall have been accomplished to Decatur. When we look at the immense quantity of cotton produced in the Tennessee Valley alone, and the necessary amount of supplies that must be carried to the inhabitants annually, and the certainty that East Tennessee will avail herself of this channel, both to send off her surplus products and to introduce her supplies, it is at once evident that the business upon the road must be very great. The seven counties in the Valley produce between 80 and 90,000 bales of cotton, viz.: Franklin, 10,000; Lauderdale, 8,000; Lawrence, 15,000; Morgan, 12,000; Limestone, 14,000; Madison, 22,000, and Jackson, 6,000; making 87,000 bales. Now we will suppose that out of the productions of this Valley, there will be transported upon this road, as follows, and other freight as stated.

Counties.	Bales produced.	Proportion carried.	Bales carried.	Distance carried.	Bal. con-v'd 1 m.
Franklin,	10,000	9/10	9,000	6	54,000
Lawrence,	15,000	4/5	12,000	22	264,000
Morgan,	12,000	5/6	10,000	35	350,000
Limestone,	14,000	½	7,000	45	315,000
Madison,	22,000	½	11,000	45	495,000
Jackson,	6,000	¾	4,500	45	202,500
Lauderdale,	8,000				
	87,000		53,500		1,680,500

Making 1,680,500 bales conveyed 1 mile which at 1½ cents per bale, is	$25,507 50
Shipping commissions on 53,500 bales cotton, at 25 cents, -	13,375 00
East Tennessee produce, lumber, &c. say 5,000 tons, at $1 80, -	9,000 00
15,000 tons up freight conveyed the whole distance, at $4, -	60,000 00
United States' Mail, say - -	2,000 00
	$109,582 50

45 miles of Railway, at $4,000, - -	$180,000
Depots at the necessary points, - -	20,000
Cost of road, - -	$200,000

$109,582 50 profit upon $200,000 capital, is equal to 54¾ per cent. Passengers, as before, will pay the expense of conveyance, and keep the road in repair; and to show that this is an ample allowance, the following is given: say 1,680,500 bales÷5 (the number of bales to make a ton)=336,100 tons carried one mile, and 5,000+15,000×45=900,000 tons one mile, and 336,000+900,000=1,236,000 tons conveyed one mile, which at ½ cent per ton per mile amounts to $6,180 expense of conveyance. The repairs of the road, as before estimated at $100 per mile per annum, will be $4,500, and 6,180+4,500=10,680. Now, in order that passengers shall just pay the above expense, fare being charged at 4 cents per mile, it will require 9½ passengers daily to travel the whole distance in each direction; and commissioners for receiving and forwarding being charged on up freight at the rate of 6¼ cents per 100 lbs., will make on 15,000 tons=33,600,000 lbs. $21,000, which will undoubtedly more than suffice to pay all agency and depot expenses. To accomplish the above assumed transit by locomotives, and to provide for the maximum period, at least three of those machines would be required, making two trips, or 90 miles per day each, from the 1st December to the 1st May; during the remainder of the year much less power would be necessary. The above assumption of business in the transportation of cotton from the counties above the shoals, may at first view appear extravagant, as it has been generally apprehended that much difficulty and inconvenience would attend the getting of freight upon the Railroad from the river at Decatur, and that consequently the most of the cotton raised above the shoals would be lighted through. But a plan has been conceived, which will, it is confidently believed, obviate the difficulty almost wholly. The following is an outline of the mode and manner by which it is to be effected, viz.: The Company will procure a steamboat of appropriate powers and dimensions, which will ply between Decatur and any and all the different landings upon the Tennessee river, between the head of the Muscle Shoals and Gunter's Landing, wherever freight may be collected. The plan of the boat to be so designed that she may take a certain number of railroad cars, say ten, upon her; which cars, empty or freighted, will be received upon, or discharged from her, by a proper application of her own power, retarding the cars on the descent, or propelling them on the ascent, upon the inclined plane, upon which they will meet the boat from the road, or depot. Upon this plan, all the cotton and other freight delivered upon the banks of the river, within the range of the said boat, would have almost as ready access to the railroad as if it were deposited in the depots and sheds at the head, or along the said road. In fact, it would give all the facilities, as to business and intercourse, that an extension of the railroad would, were it continued to all the points in question. The boat should be built upon what is termed the twin principle, giving a large deck surface for the reception of the cars, and a second deck would accommodate passengers, of whom there would be, without doubt, a great number.

It was designed to present an estimate of the probable amount of business to be done when the road shall have been completed to the county line, but the space of time between the 1st of June and 1st of December being that portion of the year when but little business could be expected to be done upon this portion of the road, and as it is anticipated that the road will be completed and in operation to Courtland by the first day of December, it is believed that the estimate already presented, under that state of the work, will suffice.

The whole of the foregoing is respectfully submitted, by

DAVID DESHLER, Engineer, &c.

Mr. A. Canfield's Description of his Iron Tension Bridge. [Communicated by the Inventor for the Mechanics' Magazine.]

Fig. 1 is a projection or side view of the bridge. Figs. 2 and 3, parts of one frame in perspective. Fig. 4, projection of the foot of the brace.

The upper horizontal pieces are called the upper strings. The lower horizontal pieces the lower strings. The upright pieces the posts. All these may be either chains or

Fig. 1

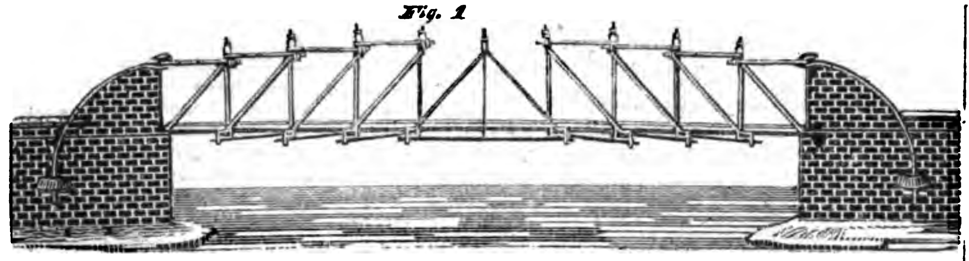


Fig. 2

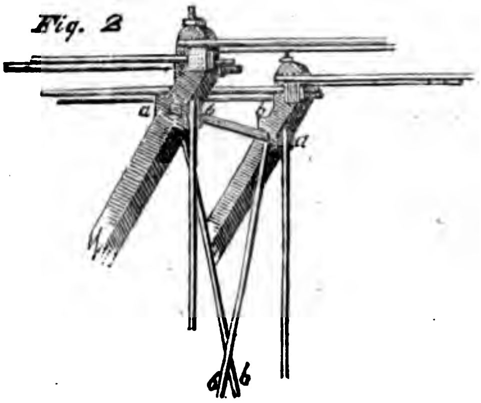


Fig. 3

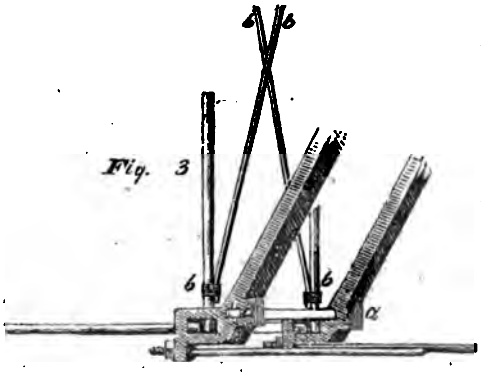
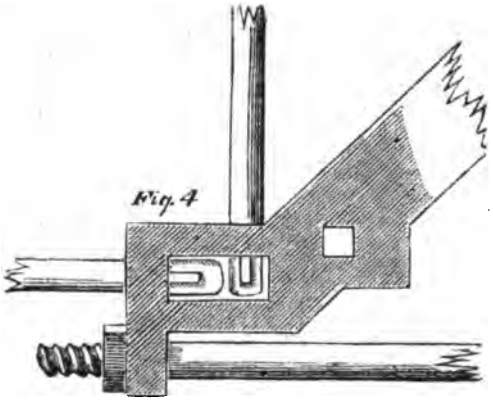


Fig. 4



bars. The oblique pieces are the braces. On each side of the road-way the frame is double, that is, it has a double set of braces, &c. in order to have a wider base at the abutment.

The bars connecting the braces are the cross-bars, see *a a a a*, Figs. 2 and 3. The pieces running from the ends of the upper cross-bars to the lower end of the post on the opposite side of the frame are called the lateral braces, see *b b b b*, Figs. 2 and 3. The upper strings are double, and pass round the head of the first brace, and are secured with screws and nuts at the head of the second brace. The pieces are supposed to be numbered 1, 2, 3, &c. from the abutments.

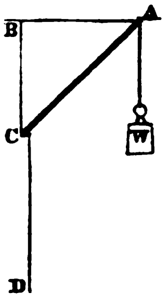
The first upper strings are firmly attached to the abutment and to the head of the first brace. To the head of the first brace the first post is attached, and also the second upper string. To the foot of the first post is keyed the second brace. The head of the second brace is sustained by the second upper strings, running from the head of the first brace. The foot of the second brace is prevented from moving horizontally by the second lower strings, so that when the span is complete the upper strings are acted on by a direct tension from the abutment, and the lower strings by a tension from the middle of the span. The floor, of either iron or wood, to be supported by the lower cross-bars.

The upper strings, from the head of the centre braces to the next brace on each side, may be left out, as there can be no stress on them; and also the lower strings, from the abutment to the foot of the second brace. This leaves all the iron at liberty to contract and expand without the least strain on any part. It is propòsed to connect the parts last referred to by a spiral spring, that will yield an inch or two, with a tension of one or two tons.

You will observe that there can be not the slightest vertical motion in the bridge without an absolute *stretching* of the iron. In addition to the lateral braces in the frames, all the lateral bracing may be put in as in any other construction; and to give it any longitudinal movement, the frames of one half the span must be actually *raised up*, turning on the head of the first brace as a centre.

In estimating the strength, and also the stress from the weight of the bridge, I refer to only one side, or one half the span. Of all the results that I have seen, of experiments on the strength of iron, the lowest is 25 tons as the strength of a bar an inch square. Emerson says "34 tons may be safely suspended on a rod of iron an inch square." I suppose it will sustain 25 tons; and suppose a bridge of 80 feet span, or ten braces, each extending over eight feet, and that the upper strings at the abutment are *two* inches in the section, (a little less than one and a half inch round iron,) each string then will sustain twice 25, equal to 50 tons. But as the stress is on four of them, (that is, two on each side of the road-way,) the strength of the first braces will be 50 tons, multiplied by 4, equal to 200 tons; the second brace will sustain one half of this, equal to 100 tons; the third brace one-third, equal to 66·6 tons; the fourth brace one-fourth, equal to 50 tons.

This (fourth brace) is the point of greatest stress, for the centre has its support on each side.



To estimate the stress on the abutment, suppose B A to be the upper string, A C the brace, W a weight suspended at A. Now, as the brace is at an angle of 45 degrees, the weight W causes a *horizontal* pressure at C, exactly equal to the tension on B A. Suppose now 50 tons on the fourth brace, or at the centre of the bridge, the tension on the B A, or the first brace, will be 200 tons. The horizontal pressure at C is the same. Then, the power acting to turn the abutment on the point D is the difference of the products of 200 tons multiplied into D B, and 200 tons into D C. B C is 8 feet. Suppose D C to be 16 feet, or two-thirds of B D: then 200 tons, minus two-thirds of 200 tons, gives 66·8 tons for the stress on the abutment. This acts with a leverage of 24 feet.

I have here taken the extreme weight, which is of course many times greater than would ever be put on the bridge. The stress at the abutment from the weight of two frames, without the floor, is 7 1-9 tons. On a pier the pressure would be vertical only.

The cost of three frames, (that is, of a bridge with two road-ways,) would be $2,362. This is a matter of certain and simple calculation, by reducing the contents to cubic inches and pounds.

In making this estimate I take the first brace 4 inches square; the upper strings (double) and 2 inches in the section, and all the parts diminishing in a much less ratio than the stress upon them. All the parts diminish towards the centre excepting the lower strings. The stress upon them being greatest at the centre of the span.

The braces (of cast iron) weigh 23,224 pounds. The other parts of wrought iron weigh 15,013 pounds. The castings can be obtained at 5 cents the pound, and the wrought iron at 8 cents.

In this construction the iron acts only in the direction in which it has the *greatest* strength, *viz.* a direct tension or a direct thrust, there being not the slightest lateral strain. The stress upon each part from any given weight is a matter of simple calculation. Each piece may be proved before it is used. The contraction and expansion are effectually provided for, and it appears to possess every requisite in a bridge.

Aug. Canfield.

Paterson, N. J., June 12, 1833.

The steam engine and spinning jenny will do more for our national prosperity than all our statesmen and generals.

☛The Capabilities of Machinery in the Increase of Manufactures.—In our remarks last week on open trade with *one hundred millions in India, and three hundred and fifty millions in China,* we observed that our manufactures were capable of being increased to any extent: that extent is certainly not *infinite*—it is however *indefinite*,—and to an indefinite extent our manufactures might be multiplied by machinery. In the single but important article of cotton, one man can now produce two hundred times more goods in a week than he could in 1760, when George the Third ascended the throne. One mill in Manchester can, when all the spindles are at work, spin as much cotton thread in a week as would go round the world.. In the manufacture of hosiery, which is seated chiefly in the midland counties of Nottingham, Derby, and Leicester, machinery has reduced stockings one hundred per cent. compared with what they were twenty years ago. Owing to machinery, lace, which was 2s. per yard eight years ago, may now be bought for 4d.; what was £4 10s. per yard twenty years ago, is now 18d.; and some kinds may be bought as low as one farthing per yard! Woollens have experienced less reduction in price than any other kind of wearing apparel. At a paper manufactory in Hertfordshire, a quantity of pulp can, at a distance of 27 feet from the cistern in which it lays, be converted in three minutes, by machinery, into a sheet of paper ready to be written upon! Such is the continual advancement made in the Manchester manufactures by machinery, that the trade say, if the manufacturer were to leave manufacturing for a few years, he would be quite lost upon returning into it again. Railroads are machinery, and their adoption and extension will tell upon the price of manufactured goods. Although the improvements in machinery during the last thirty years have been so wonderful, as to unite the realities of truth with more than the wonders of fiction, yet who will be so bold as to say that we are at the very top of the hill of advancement in mechanism? It was stated in evidence before a parliamentary committee, at the conclusion of the late calamitous and ruinous war, to the astonishment of the committee, that during the war machinery equal to the power of sixteen millions of men had been set to work in this country! and if a market could be found for what machinery is able to produce, that could soon be doubled. Now, owing to the increase of the population, particularly of the laboring classes, and the want of markets, machinery is in bonds, and the mechanic stands with one hand tied behind him, while the starving and misguided operative is ready with both hands to demolish his valuable inventions. What we want now is to open trade to India and China; then will the green withes, wherewith the Sampson of machinery is bound, be broken asunder, and the steam engine and spinning jenny, to which England owes more than all her generals, admirals, and statesmen, will increase that debt, by securing the valuable *natural* productions of art and science.—[London paper.]

Thames Tunnel.—Two estimates have been furnished by Mr. Brunel for the completion of the work: one to make it available for foot passengers, amounting to £146,000; and the other, which includes the sum required for the purchase of the ground for making the approaches and descents into the Tunnel on both sides of the river for carriages, amounting to £248,000; and from the experience gained during the construction of the part now finished, here is just ground for concluding that either bject is attainable for the sum specified.

Boston, July 9, 1833.

To the Editor of the American Railroad Journal:

Sir,—It is melancholy to find such men as Mr. Sullivan encouraging the use of wooden rails, or, what is much the same, timber with hoops of iron attached to it, while there is any probability of the capital required for a substantial iron railway being available. It is not for me to say, Mr. Editor, that the cheaper railway in the first cost does not necessarily return the greatest per centage to the subscribers, but that what should always be treated upon as a very essential item in the first cost of a railway, is the repairs which are required when finished, and in full operation. One of the greatest drawbacks on such incomes being those repairs towhich a road of improper construction is always and continually liable. This eats up the returns and burdens the trade, and incenses the traders, and perplexes the company; so that any one who has had experience in railways, will agree with me that, while there is any probability of the capital necessary for an iron road being subscribed, it is by far the most economical to the subscribers, since its returns are in a greater ratio than the other—its liability to accidents, and charge of renewal and management, being comparatively inconsiderable. It is better to have a wooden railway than no railway at all, in as much as a wooden railway is superior to an ordinary road. When traffic is at all considerable, any improvement, however imperfect, has been found worthy of attention, and while money could not be had to form a good road, it was very meritorious in engineers to improve and make the most of that immediately under consideration; but it is hoped they will not be so lost to the children of their adoption as to pawn them upon the public for the offspring of genuine science, or by any means, direct or indirect, encourage a belief that a bad road is as good as a good one.

I doubt much if any arguments could convince you, Mr. Editor, that the clumsy presses in use forty years ago were equal to those of the present day; or that a log road is equal to a M'Adamized one; or a wooden clock to one of brass; or that a surface of wood can receive as close a polish as one of iron. The want of means, and ignorance of a better, permitted wooden railways to exist for a long time in England, but all the improvements in that branch of internal communication have been made since the introduction of iron. It is hoped that in this, as in other branches of science, you will avail yourselves of the facts and conclusions of English engineers, not that you should notice the weary ground which has been already ploughed to your hand, as if it were necessary in acquiring a knowledge of ship-building to commence with the canoes, and rafts, and toys, of savages and children.

Mr. Sullivan says very truly, that he prefers the more durable road, but the fact of giving such statements as his last publicity, is encouraging, as I have seen in some instances a belief in the public mind, which is necessarily dependent for its information on practical men. that timber may be made equally good and durable as iron; and, therefore, that the cheapness of the latter ought to give it the preference. There can be no doubt that the wood which eventually yields tho greatest per centage, is the best for the subscribers; and on a great public thoroughfare, with sufficient funds. I will not be called upon to prove that a well constructed iron railway possesses, indisputably, this advantage. Very respectfully, yours,

S. D.

Improved Manufacture of Metallic Railings for Railroads.—In this improvement the rails are to be made as they now are, and the chairs as they now are. The latter shall be fastened, as usual, into masses of stone or wood, and the rail to be secured into these chairs, as at present. But, for further security, that part of the rail which sits in the chair, and fits into it, and is secured by nuts, and screws, and pins, as at present, is to have a long rod of malleable iron fastened to it, and that rod made to penetrate deep into the centre of the chair by means of a hole prepared to receive it. The bolt which fastens the rail to the chair is to pass through this perpendicular rod. Again, half way between each chair, a brace, or fastening, in the rail is to be made; at this brace should meet the ends of two rods, the other ends of which should be fastened to the chair at each extremity of the rail; thus the rail is fixed in its place by the perpendicular rod, as far as regards its ends, and it is kept down in the middle by these diagonal rods, which rise at their junction with the rail, and dip at each end to the chairs whereto they are secured. It is also necessary to keep the two rails of the road in their true position, with regard to each other, and this is effected by horizontal roads of the same material with the other, capable of bearing the same weight and sustaining a similar force; and these are secured to the rail at the braces, that is, where the junction of the diagonal rod with the rails is formed, and so past from the brace on this side of the road, to the brace on that, binding the two rails together; or, the ends may be secured to the opposite chair with the same effect. The whole of these braces, chairs, bolts, and rods, form what is called a compound railroad, and though, in the first instance, increasing the cost, yet as they prevent the necessity of repair, and greatly add to security, durability, and utility of the road, the suggestion is an important one.—[New Monthly Mag.]

The Railroad.—The number of passengers over the Saratoga and Schenectady Railroad during the week ending on Saturday, including pleasure parties, between the two villages, was 3550. The whole number from the commencement of July up to that period, has been rising 10,000; and it may safely be calculated that the total at the close of the month will not fall short of 12,000. This will fully equal any anticipations that have heretofore been made relative to the travel on the road.

The engine used thus far answers a most valuable purpose, and has been sufficiently tested, we think, to show that it is at least equal to any locomotive ever used in this country. It has on several occasions taken a train of 8 carriages, containing from 160 to 180 passengers, with three baggage waggons, and performed the trip to Schenectady in a little more than an hour and a half, frequently moving at a velocity of 20 miles an hour. The spectacle, so far in the interior, is one of a truly imposing character, and will for a long time prove a novelty of much interest to our inhabitants, and to the visitants who annually resort to these watering places.—[Saratoga Sentinel.]

Manchester and Sheffield Rbilway.—At the adjourned meeting of proprietors of the Manchester and Sheffield railway, held at Manchester on Wednesday; it was unanimously agreed to dissolve the company, and abandon the undertaking, and to return the balance in the hands of the treasurer to the subscribers.

Steamboat Safety Apparatus.—Experiments are in progress at the Franklin Institute, Philadelphia, for testing the tenacity of iron. They were instituted by a resolution of Congress, and are made under the direction of the Secretary of the Treasury. Mr. Johnson superintends them. The immediate object of the experiments was the increase of safety and certainty in the construction of steam boilers, the frequent bursting of which on the western waters had occasioned so many disasters. The Pennsylvanian gives some of the results: the machinery with which they were made is said to be better than any ever tried in Europe, and it is so contrived as to be used at any temperature of the metals, from 0 to 500 degrees of Fahrenheit.

It was found that, up to 450 degrees, the tenacity of good iron increases in a direct ratio with the heat applied. This is contrary to the popular opinion. One bar of Tennessee iron, manufactured at the Cumberland Iron Works, below Nashville, was submitted to both cold and hot processes, and showed, as the temperature varied, a tenacity ranging from 59,000 to 64,000 pounds the square inch. The best Pennsylvania and Tennessee iron exhibited nearly the same qualities. Connecticut iron is also remarkable for tenacity; that of New-York had not been tried.

The Pennsylvanian adds one remarkable general result, which we quote as a matter of public congratulation. It is this: "The most ordinary American Iron is equal to the best British—and the best American is equal and frequently superior to the best Swedish and Russian that can be imported." A report of all these experiments and results is to be made to the Secretary of the Treasury, and laid before Congress.—[Balt. Amer.]

Extract from a letter, dated "Avoylle Ferry, on Red River, La., July 2d, 1833:

"The Cholera has generally subsided on those plantations in the parish of Rapide where it made its first appearance, and the planters returned with their force to their plantations again. The loss of slaves has been considerable, as well as loss in their crops. Some planters that lost but few hands have turned out one hundred acres or upwards of their cotton crops, in order to do more justice to the balance.

"The fatal disease is spreading in different directions. On Friday last there were several deaths in the town of Natchitoches, where it has attacked the white population. A few days ago there were fifty to sixty cases on Cicily Island, in the parish of Catahoula, and several deaths, confined generally to slaves. It is also raging with great mortality among the slaves in Point Coupee, on the Mississippi River.

"The parish of Avoylle continues healthy—but one case heard of in the parish, although it is now all round us.

"Capt. Shreevé, who has the management of the United States Snag Boats, passed down a few days ago with the four Steamboats from the Raft on Red River, where they have been employed this season in clearing out the raft. it was reported some days ago, that they had cleared the Raft upwards of seventy miles this season, and would be able to complete it next season; as the boats did not stop on their way down, on account of the cholera, we have no report from Capt. Shreeve, but anxious."

Babbage on the Economy of Manufactures.

[Continued from page 440.]

The following table shows the dimensions and price, when silvered, of the largest plates of glass ever made by the British Plate-Glass Company, which are now at their warehouse in London:

Height. *Inches.*	Breadth. *Inches.*	Prices when silvered. £.	s.	d.
132	84	200	8	0
146	81	220	7	0
149	84	339	1	6
151	83	239	10	7
160	80	246	15	4

The largest glass in the Paris list, when silvered, and its dimensions and price reduced to English measure, is,

128	80	629	12	0

151. If, therefore, we wish to compare the value of any article at different periods of time, it is clear that neither any one substance, nor even the combination of all manufactured goods, can furnish us with an invariable unit by which to form our scale of estimation. Mr. Malthus has proposed for this purpose to consider a day's labor of an agricultural laborer as the unit to which all value should be referred. Thus, if we wish to compare the value of twenty yards of broad cloth in Saxony at the present time, with that of the same kind and quantity of cloth fabricated in England two centuries ago, we must find the number of days' labor the cloth would have purchased in England at the time mentioned, and compare it with the number of days' labor twenty yards of the same cloth will now purchase in Saxony. Agricultural labor appears to have been selected, because it exists in all countries, and employs a large number of persons, and also because it requires a very small degree of previous instruction. It seems, in fact, to be merely the exertion of a man's physical force; and its value above that of a machine of equal power arises from its portability, and from the facility of directing its efforts to arbitrary and continually fluctuating purposes. It may perhaps be worthy of inquiry, whether a more constant average might not be deduced from combining with this species of labor those trades which require but a moderate exertion of skill, and which exist in all civilized countries, such as those of the blacksmith and carpenter, &c.* In all such comparisons there is another element, which, though not essentially necessary will yet add much to our means of judging. It is an estimate of the quantity of that food on which the laborer usually subsists, which is necessary for his daily support, compared with the quantity which his daily wages will purchase.

152. The existence of a class of middle-men between small producers and merchants is frequently advantageous to both parties; and there are certain periods in the history of several manufactures which naturally call that class of traders into existence. There are also other times when the advantage ceasing, the custom of employing them also terminates; the middlemen, especially when numerous, as they sometimes are in retail trades, enhancing the price without equivalent good. Thus, in the recent examination by the House of Commons into the state of the Coal Trade, it appears that five-sixths of the London public is supplied by a class of middle-men who are called in the trade "Brass-plate Coal-Merchants:" these consist principally of merchants' clerks, gentlemen's servants, and others, who have no wharves, but merely give their orders to some true coal-merchant, who sends them in the coals from his wharf. The brass-plate coal-merchant, of course, receives a commission for his agency, which is just so much loss to the consumer.

OF RAW MATERIALS.

153. Although the cost of any article may be reduced in its ultimate analysis to the quantity of labor by which it was produced; yet it is usual, in a certain state of the manufacture of most substances, to call them by the term raw material. Thus, iron, when reduced from the ore and rendered malleable, is in a state of preparation for a multitude of useful purposes, and is the raw material out of which most of our tools are made. In this stage of its manufacture, but a moderate quantity of labor has been expended on the substance; and it becomes an interesting subject to trace the various proportions in which raw material, in this sense of the term, and labor, unite to constitute the value of many of the productions of the arts.

154. Gold-leaf consists of a portion of the metal beaten out to so great a degree of thinness, as to allow a greenish-blue light to be transmitted through its pores. About 400 square inches of this are sold, in the form of a small book containing 25 leaves of gold, for 1*s*. 6*d*. In this case, the raw material, or gold, is worth rather less than two-thirds of the manufactured article. In the case of silver-leaf, the labor considerably exceeds the value of the material. A book of fifty leaves, covering above 1,000 square inches, is sold for 1*s*. 3*d*.

155. In the fine gold chains made at Venice, we may trace in the various prices and sizes the relative influence of the two causes above referred to. The sizes of these chains are known by numbers, the smallest having been (in 1828,) No. 1, and the numbers 2, 3, 4, &c., progressively increasing in size. The following Table shows the numbers and the prices of those made at that time.* The first column is the number by which the chain is known; the second expresses the weight in grains of one inch in length of each chain; the third column shows the number of links in the same length; and the last expresses the price in francs, worth ten-pence each, of a Venetian braccio, or about two English feet of each chain.

No.	Weight of one inch, in grains.	Number of links in one inch.	Price of a Venetian Braccio, equal to two feet ½ inch English.
0	.44	98 to 100	60 francs.
1	.56	92	40
1½	.77	88	26
2	.99	84	20
3	1.46	72	20
4	1.61	64	21
5	2.09	64	23
6	2.61	60	24
7	3.36	56	27
8	3.65	56	29
9	3.72	56	32
10	5.35	50	34
24	9.71	32	60

Amongst these chains, that numbered 0 and that numbered 24 are exactly the same price, although the quantity of gold in the latter is twenty-two times as much as in the former. The difficulty of making the smallest chain is so great, that the women who made it cannot work above two hours at a time. As we advance from the smaller chain, the proportionate value of the work to the worth of the material becomes less and less, until, at the numbers 2 and 3, these two elements of cost balance each other; after which the difficulty of the work decreases, and the value of the material increases.

156. The quantity of labor applied to these chains is, however, incomparably less than that which is applied to some of the manufactures of iron. In the case of the smallest Venetian chain the value of the labor is not above thirty times that of the gold. The pendulum spring of a watch, which governs the vibrations of the balance, costs at the retail price two-pence, and weighs fifteen one-hundredths of a grain; whilst the retail price of a pound of the best iron, the raw material out of which fifty thousand such springs are made, is exactly the same sum of two-pence.

157. The comparative price of labor and of raw material entering into the manufactures of France, has been ascertained with so much care, in a memoir of M. A. M. Heron de Villefosse, "*Recherches Statistiques, sur les Metaux de France*,"† that we shall give an abstract of his results reduced to English measures. The facts respecting the metals relate to the year 1825.

In France the quantity of raw material which can be purchased for £1 when manufactured into silk goods, is worth £2 37—broad cloth and woollens, 2 15—hemp and cables, 3 94—linen, comprising thread laces, 5 00—cotton goods, 2 44.

The price of pig lead was £1 1 per cwt.; and lead of the value of £1 sterling, became worth, when manufactured into sheets or pipes of moderate dimensions, £1 25—white lead, 2 60—ordinary printing characters, 4 90—the smallest type, 28 30.

The price of copper was £5 2 per cwt. Copper worth £1 became, when manufactured into copper sheeting, £1 26—household utensils, 4 77—common brass pins tinned, 2 34—rolled into plates covered with $\frac{1}{27}$ silver, 3 56—woven into metallic cloth, each square inch of which contains 10,000 meshes, 52 23.

The price of tin was £4 12 per cwt. Tin worth £1, when manufactured into leaves for silvering glass, became £1 73—Household utensils, 1 85.

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* Much information for such an inquiry is to be found, for the particular period to which it refers, in the Report of the Committee of the House of Commons on Manufacturers' Employment, 2d July, 1830.

* A still finer chain is now manufactured (1832.)

† Memoires de l'Institut. 1826.

Stereotyping first invented in America.—In the last number of the "American Journal of Science" we find an original paper of the late Lieut. Governor Colden, describing the process of stereotyping, addressed to Dr. Franklin, and the Doctor's reply thereto, dated in 1743, which is long before the invention was brought into practical operation in Europe. It will be perused with interest, as it proves that to this country belongs the merit of the first introduction of this useful art. We extract the following:

"Ever since I had the pleasure of a conversation with you, though very short, by our accidental meeting on the road, I have been very desirous to engage you in a correspondence. You was pleased to take some notice of a method of printing which I mentioned to you, at that time, and to think it practicable. I have no further concern for it than as it may be useful to the public; my reasons for thinking so you will find in the enclosed copy of a paper which I last year sent to Mr. Collinson, in London. Perhaps my fondness for my own conceptions may make me think more of it than it deserves, and may make me jealous that the common printers are willing to discourage, out of private interest, any discovery of this sort. But as you have given me reason to think you zealous in promoting every useful attempt, you will be able absolutely to determine my opinion of it. I long very much to hear what you have done in your scheme of erecting a society at Philadelphia for promoting useful arts and sciences in America. If you think of any thing in my power whereby I can promote so useful an undertaking, I will with much pleasure receive your instructions for that end. As my son Cadwallader bears this, I thereby think myself secured of the pleasure of a line from you by him."

Philadelphia, Nov. 4, 1743.

Sir,—I received the favor of yours, with the proposal for a new method of printing which I am much pleased with; and since you express some confidence in my opinion, I shall consider it very attentively and particularly, and, in a post or two, send you some observations on every article.

My long absence from home in the summer put my business so much behind hand, that I have been in a continual hurry ever since my return, and had no leisure to forward the scheme of the society. But that hurry being now near over, I propose to proceed in the affair very soon, your approbation being no small encouragement to me.

I cannot but be fond of engaging in a correspondence so advantageous to me as yours must be. I shall always receive your favors as such, and with great pleasure.

I wish I could, by any means, have made your son's longer stay here as agreeable to him as it would have been to those who began to be acquainted with him.

I am, Sir, with much respect,
Your most humble servant,
B. Franklin.
Dr. Colden.

The mode of printing above described is now known by the term *Stereotype;* and it is a curious fact that the stereotype process, said to have been invented by M. Herhan, in Paris, and now practiced by him in that city, under letters patent of Napoleon, is precisely the same as that spoken of by Dr. Colden more than sixty years ago.

It is more than probable that when Dr. Franklin went to France, he communicated Dr. Colden's "new method of printing" to some artizan there, and that it lay dormant till about sixteen years since, when Herhan, a German, who had been an assistant to M. Didot, the printer and type-founder of Paris, but then separated from him, took it up in opposition to M. Didot. We have conversed with gentlemen who have seen M. Herhan's method of stereotyping, and they describe it to be exactly what Governor Colden invented. This fact established, there can be no doubt that M. Herhan is indebted to America for the celebrity he has obtained in France.

Since the above papers fell into our hands, we have endeavored to obtain information respecting the different modes of stereotyping now in use. The following is the result of our inquiries:

By a book published in Paris, about ten years since, by M. Camus, of the French National Institute, we find that a Bible was printed in Strasburgh, by one Gillet, more than a hundred years ago, with plates similar to those now used by Didot and Herhan, but not by any means so perfect. Gillet's moulds were made of a fine clay and a particular kind of sand found only in the neighborhood of Paris. It is also stated that a number of other ingenious men had at various times produced plates tolerably perfect, by different processes, but we may safely infer, from the art having made no great progress until the time of Didot the elder, that their endeavors had not been crowned with much success.

At the beginning of the French Revolution, great quantities of paper money becoming necessary to supply the deficiency of specie, either concealed or sent out of the kingdom by the rich, Didot was applied to by the National Assembly to invent some kind of *assignat* or bank bill, which should not easily be imitated; and at this period it was that M. Didot first directed his attention to the means of producing, *in relief,* a set of plates, to print on a common printing press, which were exactly *fac-similes,* and could not without much difficulty be falsified. This process was termed Polityping, as the mould in which the plates were cast was durable, and would produce any number of copies; the usual mode of stereotyping being, as the French term it, *a moule perdu*—it being necessary to make a new mould for every plate.

But as M. Didot's views were by degrees extended to the casting of pages for book printing, he found it unnecessary to use durable moulds, and therefore, after a year's experiment, invented a composition, which, like the sand used by brass-founders, might be wrought over again for different casts. The elegant editions produced by M. Didot and Sons are the best proofs of his success.

When the fame of M. Didot's invention reached England, Lord Stanhope, an ingenious and wealthy nobleman, whose time and fortune were principally devoted to the advancement of the arts, made propositions to Mr. Andrew Wilson, of Wild Court, Lincoln's Inn Fields, proprietor of the Oriental press, to assist him in such experiments as might bring to perfection a new mode of stereotyping, of which his lordship had obtained some ideas. Mr. Wilson embraced the proposal; and after four or five years of incessant labor, they attained nearly all the advantages they had contemplated. Mr. Wilson, in the year 1802, built his foundry in Duke street, Lincoln's Inn Fields, and in the following year disposed of the secret for six thousand pounds sterling, and some future advantages, to Mr. Richard Watts, for the use of the University of Cambridge. In the year following he disposed of it on similar terms to the University of Oxford.*

About two years ago a brother of Mr. Watts, of Cambridge, began a course of experiments in this city,† for a more cheap and easy manner of stereotyping than any hitherto discovered; and, in spite of innumerable disadvantages, has succeeded beyond his utmost expectation. We have seen plates of his casting of the greatest perfection and beauty. The chief difficulty he has experienced arose from the jealousy and illiberality of the common type-founders, who refused to lend the little aid he required of them. It is agreeable to us, however, from our own observations to be able to state that by uncommon perseverance through accumulated obstacles, Mr. Watts has invented a method of casting the common types much more perfect than those made in the usual way; and now will proceed with his plates without the assistance of other artists.

The principal defects in M. Didot and Lord Stanhope's processes, arise from the softness of the moulds they employ, which are composed of plaster of paris and some other ingredients. In taking them from the page, of which they are intended to cast a perfect copy, some part of the composition will always remain in the type, and leave the mould imperfect. After the plates are cast there is consequently much work for an engraver, to make them fit for use. Mr. Watts' mould being of solid materials, no such inconvenience can arise.

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*The two Universities of England have the exclusive right of printing Bibles and Prayer Books. Twenty or thirty presses are generally employed in that business alone; the classic departments require many others.

† New Haven, Conn.

Largest Column in the World.—The following is an account of the monument erected by the Emperor Nicholas to the memory of his brother, the late Emperor Alexander. The shaft was placed on its pedestal on St. Alexander Nefskey's day, August 30, (O. S.) 1832, in the presence of the imperial family, nobility, citizens, and strangers. The day was remarkably fine, and an immense concourse—an almost countless multitude—assembled to witness the operation, in the large square in front of the Hermitage, or winter palace of the Emperor. The monument is of red granite. The pedestal, which is square, is 40 feet high; the shaft is round and in one piece; it is 85 feet high and 12 feet in diameter at the top; it weighs 600 tons. The column supports a colossal bronze statue, representing an angel holding a cross. The statue, with its pedestal, including the capital of the column, is 35 feet high, and the height of the monument from the ground to the top of the statue is 165 feet. The stone was brought from Finland, (from the same quarry where the celebrated pillars of the castle and church, polished like marble, were procured,) and transported to St. Petersburgh in a ship built for the purpose, towed by a steamboat. The inclined plane on which the shaft was rolled from the river Neva to its present site, contained a forest of wood, and cost in that country, where it is so cheap, a million of rubles, or $200,000. The column was raised and safely placed on its pedestal by means of 60 capstans, manned by 2500 veterans, who had served with Alexander in his most glorious campaigns. Each of them wore badges of honor. The preparations for the stupendous undertaking were so complete, that not the slightest accident occurred; and during the operation of raising the shaft, not a whisper nor a word was heard throughout the vast multitude who witnessed the scene.

How to tin Nails, Tacks, &c.—First clean the surface of the articles to be tinned from rust or other oxide, by pickling them, or putting them into sulphuric, muriatic, or nitric acid, diluted with water, as usual, and washing them well afterwards in water; then put them into a stone-ware gallon bottle, together with a proportionate quantity of bar or grain tin, and of sal ammoniac: next place this vessel, lying upon its side, over a charcoal fire, made upon a forge hearth, and keep turning it round, and frequently shaking it, to distribute the tin uniformly over the surface of the articles to be tinned; lastly, throw the articles into water, to wash away all the remains of the sal ammoniac, and finally dry them in saw-dust made warm. The great merit of this process consists in the employment of the stone-ware vessel, which not only prevents the dissipation of the sal ammoniac in fumes, but also gives up the whole of the tin to the articles to be tinned, which would not be the case were a metallic vessel to be used.

Blacking.—"A Subscriber" asks for a receipt for making blacking, "as his family is numerous, and purchasing at 18d. per bottle is more than he can well afford." We subjoin one which is given in the Annales de Chimie, by the celebrated French chemist Braconot, who pronounces it to be, as compared with all the other known blackings, from Day's to Hunt's, "undoubtedly the cheapest and the best." Macerate one pound of malt in boiling water till every thing soluble is taken up, add 2¼ lbs. of plaster of paris well sifted, and 7 ozs. of lamp-black; then evaporate to the consistence of paste; and finally mix up with 1 lb. 2 ozs. of olive oil. It is said to spread very evenly, dry speedily, and shine brilliantly, with very little brushing; while it neither burns nor injures the leather. —[London M. Mag.]

AGRICULTURE, &c.

Fire Blight.—In the first number of Goodsell's Genesee Farmer, we find a statement containing the various opinions of the causes of fire blight advanced by writers in the New-England Farmer. In continuation of the subject the article proceeds:

"After all that had been written upon this subject in the N. E. Farmer, we find at page 19, Vol. 7, dated August 8, 1828, the following notice: "This disorder is extending itself in this vicinity to such a degree as to threaten the destruction of all our pear trees, unless some mode shall be discovered to arrest its progress. *We are satisfied that the true cause of the disease has not yet been discovered.* Dr. Fisher, Dr. Greene, and others of our best horticulturists, have made the most minute examination, and have been unable to discover any trace of the work of an insect."

Having referred to the opinions of others, we shall now add the result of our own observations upon the progress of this disease, and give our reason for some conclusions which we have been led to make rather from analogy than from having as yet discovered all that might be desired to support them. One reason why horticulturists have not made more satisfactory discoveries as to the cause of this disease, is that they have not commenced their examinations sufficiently early, and have been left to watch the progress of it after the first cause has ceased to operate.

I am inclined to think that careful examinations will support the following conclusions:

First, That the blight in Pear, Apple, and Quince trees is occasioned by an insect.

Secondly. That it is communicated to the pistil of the flower at the time that organ is in its greatest perfection, or during the expansion of the flower.

Thirdly, That it gradually spreads from the point of infection to other parts of the tree, in a manner similar to mortification in the animal kingdom.

Fourthly, That it is as capable of being communicated by inoculation as the Small Pox.

Fifthly, That no tree ever has it, unless by inoculation, until it has produced flowers.

In support of the first conclusion, so far as we observed this disease, it has spread from the place where it first commenced in an orchard, in every direction, without reference to the general course of the wind at the time, and as the Quince does not come into flower until after the Pear has shed its flowers, it cannot be attributed to an intermixture of pollen from the pear tree.

That it commences at the point of the pistil, has been evident from every case we have examined, before the different parts of the flower decayed. It often appears that no more than one flower in the cluster is infected; the fruit of the infected flower does not swell as the others, which continue their growth until mortification has, by degrees, descended through the stem, to the woody part of the fruit spur, over which it spreads, and ascends the stems of the remaining part of the cluster, which may readily be observed by a discoloration of them as it advances. In this section of country, the disease will be found to have advanced thus far by the first of June, when the leaves upon the fruit spur so affected will be found withering. After this, the rapidity with which it spreads depends on circumstances. Where there is the greatest quantity of alburnum, or elaborated sap, the disease spreads with greatest rapidity, which is increased by the state of the atmosphere, as in warm moist weather it progresses further than when dry and cool.

It is not until the middle of June that this disease begins to manifest itself to superficial observers. About this time the mortification from the fruit spray will have reached the limbs, and where they are humorous, and most of them affected, they will in a short time destroy the bush, so as to cut off all communication between the upper and lower parts of the limb, between the bark and wood. As the ascending sap passes through the sapwood to the leaves before it is elaborated, this communication is not cut off until later in the season, and the outer ends of the limbs remain green until the disease has penetrated the wood; at which time the agent of the sap is cut off, and the whole limb is discolored in a short time, often in the space of a few hours.

We do not pretend to be such an adept in the science of Vegetable Pathology, as to be able to describe the manner in which the *virus* of this disease acts upon the healthy parts of the tree, but of this we are satisfied, by repeated experiments, *that it is as capable of being communicated by infection as the Small Pox, or any disease to which the human family are subject.* The manner in which we have conducted these experiments is as follows: we have taken the discolored vivid matter from between the bark and wood of a diseased limb, and put it beneath the bark of a healthy tree, in some instances covering the wound with a strip of rag which had been dipped in melted grafting wax, in others leaving the incision open; in some instances the quantity of *virus* introduced into the healthy tree was not greater than would be used to inoculate a person for small pox, and yet in every instance, within from three to five days, the disease has shown itself spreading the same as in a tree which had it the "natural way."

Trees do not have it the "natural way," until they have put forth blossoms. We have repeatedly seen young trees growing near those which were in a diseased state, which remained in perfect vigor, and this present season we have examined one, which was of a large size, which had never produced any blossoms before, and this year only upon one small limb, which produced one dozen bunches of flowers, nearly all of which were diseased, so that we think by the first of July the limb will have turned as black as if it had been scorched by fire. Amputation is the only remedy known at present. As soon as the disease is observed the limb shoud be cut off below where it can be discovered; in doing which the operator should remember that the smallest quantity of *virus* is sufficient to communicate it to a healthy part, if brought in contact with the part between the bark and wood; he should therefore be careful not to use an instrument for amputation which has been used to examine the diseased parts, unless it has been thoroughly cleaned.

We have been thus lengthy in regard to this disease, because it is one of vital importance to every farmer who would cultivate a valuable orchard, or is fond of this delicious fruit. Every Pear tree in this section will be cut off by it, unless exertions are made to check it.

Fat Sheep in Summer.—A writer in the Farmer's Journal, after stating that he applies tar to the roots of the horns of sheep, and put a little in their noses and mouths, "as affording the best security against the maggot in the head," gives the following remarks on the management of sheep in summer:

"I am careful to have none of my sheep, except those I intend for market, get very fat during the summer. I have heard it remarked, and I believe it, that after once getting *very* fat, a sheep will never arrive at the same point again. Sheep which get fat during the summer, certainly do not do as well in the fall and winter. About the middle of September I give my sheep the best feed I can, and the middle of October begin to feed sparingly with turnips, potatoes, or some kind of grain. When the time arrives for yarding, which I do rather late, I separate my flock in the following manner. In one yard I put my rams and wethers, except such of the former as have become very poor during the time of running with the ewes. In the second I put my last spring lambs; in the third all my healthy ewes, and in the fourth my old and weak (but not diseased) ewes. A sixth department is a kind of hospital, into which every sheep is removed as soon as discovered to be afflicted with disease. This arrangement I consider very important, as it affords an opportunity for treating every class of sheep in the manner judged most proper for their circumstances. I have known instances in which the lot of old and feeble ewes have come out much improved in the spring, and have produced a good fleece, and raised fine likely lambs. I always intend, however, to turn my sheep before they get so old as to become enfeebled; as they are more likely to acquire those diseases which spread through the flock."

Isabella Wine.—It has become generally known among my friends and acquaintance, that last season I made a quantity of wine from the Isabella grape; in consequence of which I have had numerous applications within two or three weeks to furnish the *receipts* by which I made the wine. I have only refrained heretofore from publishing it from the knowledge of my own inexperience in the matter; and I would now refer inquirers to that excellent work of *Mr. Adlum*, of Georgetown, D. C., and also to the translation of a French work of

Thiebaut De Berneaud, published by Mr. Canfield, of New-York, where full information may be found on the cultivation of the vine, and the manufacture of wine.

I feel it a duty, however, to give a statement of my process last season, which was successful in yielding me fifty gallons of excellent wine, from a grape which is becoming very plentiful among us, and which I had not known to have been fairly tested as a wine grape.

1st. I gathered the grapes when well ripe and dry, but did not exclude green and unripe grapes, nor pick them from the stems.

2d. Crush and bruise them in any way without breaking the seed. If the skin of the grape is only broken, it is sufficient, as the pulp will dissolve during the first fermentation.

3d. Put the *must* (or pumice) into an open cask or vessel, (which I shall call a *vat*,) and stir it well during the first day, keeping it covered over the top with a cloth.

4th. The must will rise in the vat for three or four days, and when it has ceased to rise the liquor must be drawn from the bottom of the vat as long as it will run.

5th. Press the must in any convenient way, to extract the remainder of the juice.

6th. Put it in a cask, which should be full, in order that the impurities may flow over by fermentation at the bung.

7th. Put two pounds of sugar to each gallon of liquor, unless you choose to risk the possibility of your wine becoming vinegar.

8th. Fill up the cask as often as it sinks below the bung.

9th. After it ferments eight or ten days put in the bung, and leave a very small vent by the side of it.

10th. After remaining about two months, rack it off into a clean sweet cask, well scented with a brimstone match, burnt within. If it is not fine and bright, it would be well to *fine* it with the whites of eggs beat up with sand.

11th. In the month of March it should be again racked off into a cask or bottles, and placed away for use.

The wine will be of a beautiful red color, and will at first appear sweet, but will gradually become sharper and still retain the delightful flavor, as well as odor of the grape. Mine has not yet attained a year in age, and I cannot tell what changes might be effected by time.

The Isabella grapes are very plenty this season, but, by reason of the wet and cold, are much inferior in flavor to what they were last year, and are not yet perfectly ripe. In a few weeks I shall probably make a greater quantity of wine than last season; and as some of my neighbors are also attempting the same, I hope to be gratified in hereafter giving our experiments to the public. ALDEN SPOONER.

Brooklyn, October 10. 1832.

COBS OF INDIAN CORN.—Mr. Fessenden: Are corn-cobs most profitable for manure or fuel, when hard wood is three dollars a cord?

If you will have the goodness to communicate your opinion on the subject through the medium of your useful paper, the New-England Farmer, you will greatly oblige

A YOUNG FARMER.

By the Editor.—We are not able to say whether corn-cobs would be most valuable for manure or fuel, but believe the latter, as it requires a long time to rot, or decompose them in such a manner that they would be useful as manure.

But we believe the best use to which corn-cobs can be applied, is to grind them together with the corn, and give the mixture to swine, or other domestic animals, which it is wished to fatten. The following extracts from a letter from the Rev. H. C. Perley, of New Rowley, Mass. to the Editor, may serve to explain and corroborate this assertion.

"I had corn and cobs ground together; and I put but about a peck of corn to a bushel of cobs. Meal made of this composition I scalded, and made about as thick as hasty pudding; or mixed about one peck of meal with three pecks of boiled potatoes, thickened to the consistency of pudding. With this kind of food, and what wash was made in the family, I constantly feed my swine; there were none in the neighborhood grew so fast, or were fit to kill so early in autumn. * * *

"I have also made further discovery of the use of cob meal, for other purposes besides feeding swine and cattle. I had one batch of coarse brown bread made of it, ground about half and half; sifted as usual, and the application of the usual quantity of rye meal. The bread was as high seasoned, as light, as sweet and as moist, as that made of pure Indian and rye meal; though I think it will dry rather sooner."

In the *Massachusetts Agricultural Repository* for January 1823, is a communication from Asa Rice, Jr. of Shrewsbury, in which the writer observes as follows: "The kind of meal I have used for seven years past, almost exclusively, for provender, is corn and cobs cracked and ground together, which is the best provender I ever made for fattening cattle. The reason I consider the cob useful is, it swells in the creature, and keeps him in good order. In no one instance since I have fed with this meal have my cattle been out of order by being cloyed, or scouring; they are at all times regular; but when I formerly fed with clear Indian meal, it was not unfrequent that their bowels would get out of order, and I have had considerable difficulty in regulating them again; they lost two or three days, sometimes a week. When this kind of provender was first introduced in this vicinity, it had its opposition like almost all new things. The second year, if I mistake not, which I made use of it, I thought I would try an experiment as follows, by feeding one ox with corn and oats ground, the other with corn and cobs, having a yoke of oxen so even matched that no one who viewed the cattle appeared satisfied which was best: accordingly I fed them as above. The cob is computed to make a little more than one third, therefore, I mixed the other with one third oats, which was my former mode. I gave each ox an equal quantity at a time, except the one which had corn and oats some days became dainty, and would not eat his allowance, while the other kept his regular course. The allowance for both was a little over three pecks per day. When I took the cattle to market Mr. A. White bought them; they weighed about 28 hundred and a half. The one fed on corn and oats had 162 lbs. of tallow, and weighed about half an hundred more. The one fed on corn and cobs had 163 pounds of tallow, and Mr. White pronounced his beef half a dollar on the hundred better than that of the other, mostly on account of the *color of the beef*."

The third volume of the Memoirs of the Philadelphia Agricultural Society likewise contains an article on grinding Indian corn in the cob, as food for cattle, &c. by Dr. Mease, of Philadelphia. Mills, for the purpose of grinding corn and cobs together, have been erected in Andover, Danvers, and, we believe, other places in Massachusetts. Perhaps a large mortar, with a mallet or pestle, might answer for cracking corn and cobs, and pulverise them sufficiently for cattle food.—[New-England Farmer.]

HEMP.—Mr. Clay, of Kentucky, we believe was the first who introduced the culture of this plant in the United States. It is now raised to a great extent in several counties of that state, and forms a source of wealth to those who raise and manufacture it. Many have amassed large fortunes in its traffic. During a late visit to that quarter we ascertained that the produce to the acre was, on an average, about 800 lbs. and the average price about five dollars per cwt. It is generally sold by the farmers to the manufacturers in the different villages, and by them made into bagging, bales, and other kinds of untarred cordage.

The price of American hemp is quoted in the N. Y. Market at 120 to 150 dollars per ton—Russia clean, 200 to 205 dollars.

An attempt was made two or three years since to introduce it into the state of Connecticut, and the country farther north. The plan succeeded, and the hemp grew well. Two or three men, who were up to a thing or two, appeared at Canterbury, near Norwich, with large quantities of hemp seed for sale. They proposed to sell the seed to the farmers, and gave instruction how to cultivate the plant: they stated that they had made arrangements to return in the ensuing autumn to erect machinery for its manufacture, and would give so much per ton for all that could be raised. This took well, and the rogues sold all their seed at enormous prices, and decamped; the hemp grew, was stacked, and remained in that situation, to our knowledge, a year afterwards, waiting the return of the originators of the hoax.

CAULIFLOWERS.—Instead of cutting off the whole head of a cauliflower, leave a part on, the size of a gooseberry, and all the leaves—second and even third heads will be formed; and thus they may be eaten for two or three months; when, by the present practice, by cutting the head off completely, the bed of cauliflowers is gone in two or three weeks.

THE WEEVIL.—Salt is said to be a complete preventive against the destruction of wheat by the weevil. Mix a pint of salt with a barrel of wheat, put the grain in old salt barrels, and the weevil will not attack it. In stacking wheat, four or five quarts of salt to every hundred sheaves, sprinkled among them, will entirely secure them from the depredations of the insect, and render the straw more valuable as food for cattle.—[Hort. Reg.]

CUTTING WHEAT BY HORSE POWER.—Several members of the Agricultural Society, last Wednesday, attended near Carthage to see a machine for cutting wheat by horse power in operation. It was propelled by two horses, and cut as fast as eight men could conveniently bind, doing the cutting neatly. This machine is the invention of Mr. O. Hussey, and will no doubt prove a useful addition to our Agricultural implements.

Mr. J. C. Ludlow suggested that it would be good economy of time and labor, to take a thrashing machine into the field and thrash out the grain as it is raked, thereby saving the binding and hauling to the barn or stack. We think the suggestion a good one.—[Cin. Far.]

TO PROMOTE FRUITFULNESS IN TREES.—A correspondent to the Genesee Farmer, under the signature of Ulmas, recommends a vigorous growth to young trees, that they may acquire size and strength, and not exhaust themselves by early fruitfulness. He says:

"But I proceed to consider the second inquiry, to wit—To check the exuberant growth of wood, and cause it to produce fruit-buds, flowers, and fruit.

I shall assume that the trees are of well known kinds, and whose bearing qualities have been tested, and that they are situated in an open and well cultivated ground, as I believe the whole complaint can be made under no other circumstances. The trees have also been well pruned, and are accommodated with a good shaped head for bearing, and of fair size. My answer is, *Lay your ground, on which your trees stand, well down to grass, and let it remain so for several years.* The next year after seeding the ground, the growth of young wood will be much diminished, and fruit-buds will form in moderate quantities; flowers and fruit will follow the next season. That year, if the tree be an annual bearer, an increased number of fruit buds will be found, and so continue in annual succession. If, after a few years, the tree is too stationary in its growth, for it certainly will not throw out young wood very rapidly, plough, and cultivate, and manure the land, and you can supply the trees with any amount of young wood required, although the bearing will still continue in an abated degree.

If you find your trees get too thrifty, you have only to seed down again, and manage as circumstances may require."

The following reasons why grass produces the effect seem to be satisfactory. We presume a few crops of almost any exhausting grain without manure would have the same effect. It is strongly impressed on our mind, that we have heard of pear-trees of many years' growth in grass ground, producing no fruit until the soil was disturbed by the plough. Ulmas says:

"While trees are young, their roots expand and run near the surface of the earth. If the ground be cultivated, the earth is warm and light, and the roots absorb much nourishment, and a rapid growth of young wood is the sole consequence. In process of time, as the tree increases in size, the roots find their way deep into the earth, where the temperature is lower and its growth is by degrees checked; fruit-buds are consequently formed, and trees come into the bearing state. Now, putting land into grass has the same effect. The sun is hidden from the earth; the temperature is lower; the richer nutricious gases of the soil are absorbed by the grass, and the same result is produced as if maturer age had forced the roots more deeply in the ground."

GRASS AND APPLES FOR SWINE.—There is no question but that some farmers fatten their hogs at half of the expense that it costs others. Travel almost any considerable district of our country, you will find at this season of the year one half of the swine running in the streets, and fed on nothing but thin swill. As soon as the corn is gathered, these pot-bellied and meagre creatures are shut up in pens, and fed on unbroken corn until they are fat. In this way we have known farmers to feed away their whole crop of corn, and obliged to either buy more corn or kill them not sufficiently fattened. Other farmers will keep their swine in a thriving growing condition through the summer, and when the time comes to shut them up to be fed on corn, they are more than half fat. They thus save the greater portion of their corn for family use and to sell.

The celebrated agriculturist, Arthur Young, Esq., pastured, in 1776, sixty hogs of various sizes, on only two acres of clover. They kept in good condition, and grew remarkably fast. In connection with feeding on sweet apples, many farmers in this country have entered extensively into the plan of fattening their hogs on grass. If a shady, comfortable and clean pen, into which the apples are thrown, is made in the clover field, the hogs will remain in it the greater part of the time, and thus much manure may be saved. Unless the orchard contains a greater proportion of sweet apples, this plan is better than to turn the hogs into the orchard. It will often happen that large quantities of leaves and other suitable substances may be obtained near the pen, and which may be carted into it with comparatively little trouble.

HORTICULTURAL SOCIETY OF CHARLESTON.—The Editor of the Southern Agriculturist, in noticing the May exhibition of this society, gives the following concluding remarks. They make evident the good effects of united efforts.

"On the whole, we have every reason to be gratified. Our society has increased in numbers, and what is better still, the taste for horticultural pursuits is rapidly spreading throughout our city, which is shown by the eagerness with which plants are sought after by all, whether young or old, ladies or gentlemen, and by the desire which all who have even a small spot of ground evince to have it decorated with flowers and ornamental plants, while the more substantial part of the garden is frequently boasted of, and shown with pride, as possessing vegetables which would not disgrace the table of any one. This was not the case a few years ago; and from the improvements which have already taken place, we augur the happiest results. It will yet be some time before we can vie with our northern brethren in exotic plants, especially in those which are rare and costly, but we doubt not the time will come when our exhibitions will bear a comparison with their best. And why should it not? We have both the wealth and the climate, and all that is wanting is a taste for such pursuits, which is now just springing up, but which promises to produce an abundance of fruit.

AMERICAN LARCH (*Larix Pendula* v. *Americana.*)—This tree abounds in Newfoundland, New Jersey, Pennsylvania, and as far south as the "most gloomy exposures in the mountainous parts of Virginia." The author of Sylva Americana thinks the climate of the northern States uncongenial, from the fact that it grows only in low and moist places, in Vermont, New Hampshire, Maine, and on uplands about Hudson's Bay. This opinion, however, can be confirmed only by experiment. It grows well as far south as New-York, as an ornamental tree, in a low, sandy, or moist garden soil. It is a magnificent tree, and in its native forest attains the height of 80 or 100 feet. The wood is valuable, but little used because of its scarcity. There are, undoubtedly, many native timber trees, that might be cultivated in our low and waste uplands with great profit. Useful timber of almost every kind commands high prices. We will give an example of planting forest trees in Great Britain. In 1770, Mr. White, a landscape gardener, purchased, in the higher parts of the county of Durham, an estate of 700 or 800 acres for £750. This he planted principally with a species of larch and Scotch fir. After ten or twelve years his plantations began to pay admirably well in pit-wood, hedge-stakes, and other uses. Many years ago, says Sir Henry Steuart, the larch wood alone yielded Mr. White £650 a year, and a few years ago £1000, derived principally from the thinnings. On a gravelly soil, on which some vegetable mould has accumulated, this larch doubles its value every three years, after it is 15 years old, and every 5 years after 25. In 1826, the larch and fir on the estate were valued at the enormous sum of £30,000, equal to $140,000. At this time, 1826, the proprietor was about to cut the whole down; and after taking a few crops of grain, he intended to replant, to procure a second fortune for his family.

CLIMATES OF THE EASTERN AND WESTERN CONTINENTS.—On the supposition that the American continent continues much further towards the north pole than the eastern, the former would be colder, says Malte Brun, as a greater portion would be in a frozen state.

CAVERNS.—The depth of that of Eldon Hole, in Derbyshire, England, has been sounded 9600 feet without reaching a bottom. There are some caverns from which an icy cold wind issues in summer. There are two in France, the walls of which are, in August, covered with ice that melts in December.

Beech Trees proof against Electrical Fluid.—A correspondent of the American Farmer states, that it is a very common opinion among surveyors and woodsmen of the western states, that the beech tree possesses the non-conducting power ascribed to the cedar; "I presume," says he, "I have passed a hundred oaks which have been stricken, and although beech is more common than any other timber, I have not discovered one of that kind."

Balsam of Mecca.—The balessan, balm, or balsam of Mecca, (*Balsamodendron Opobalsamum,*) belonging to the family *Bursearceæ*, is a native of the eastern coast of Abyssinia, especially at Azab, and as far as the strait of Babel Mandeb. Bruce says, it is a small tree about fourteen feet high, with scraggy branches and flattened top, like those which are exposed to the seaside blasts; the appearance is consequently stunted, and the leaves are beside small and few. He supposes that it was transplanted to Arabia, and there cultivated at a very early period. This was the *Balsamum Judaicum*, or Balm of Gilead of antiquity and of the sacred writings, it being supposed at one time to be produced only in Judea. It seems, however, to have disappeared from that country, and the supply to have proceeded from Arabia. Many fables are connected with it. Tacitus says, that the tree was so averse from iron that it trembled when a knife was laid near it, and it was thought the incision should be made with an instrument of ivory, glass, or stone. Bruce was told by Sidi Ali Taraboloussi that "the plant was no part of the creation of God in the six days, but that in the last of three very bloody battles which Mahomet fought with the noble Arabs of Harb, and his kinsmen the Beni Koreish, then pagans, at Beder Hunein, Mahomet prayed to God, and a grove of balsam-trees grew up from the blood of the slain upon the field of battle; and that with the balsam which flowed from them he touched the wounds of those even that were dead, and all those predestined to be good Mussulmans afterwards immediately came to life." To return to the balsam-tree: the mode of obtaining it remains to be described. This, according to Bruce, is done by making incisions in the trunk at a particular season of the year, and receiving the fluid that issues from the wounds into small earthen bottles, the produce of every day being collected and poured into a larger bottle, which is kept closely corked. The smell at first is violent, and strongly pungent, giving a sensation to the brain like to that of volatile salts when rashly drawn up by an incautious person. The natives of the East use it medicinally in complaints of the stomach and bowels, as well as a preservative against the plague; but its chief value in the eyes of oriental ladies lies in its virtues as a cosmetic,—although, as in the case of most other cosmetics, its effects are purely imaginary. [Edinburgh Cabinet Library, No. XII.—Nubia and Abyssinia.]

[*From the Hampden Journal, Springfield, Mass.*]

"**VALUABLE TURTLE.**"—In the year 1816, Mr. Jonathan Worthington, of West Springfield, found a Turtle upon his premises which had "J. W. 1717" marked—evidently cut with a penknife—upon the under shell. The Turtle was set at liberty, after examination, and again found in 1823; again in 1828; again in 1829; and a few days since in 1833. The father, grandfather, and great grandfather, had the same given name, with the present *Jonathan* Worthington, who thinks that the great grandfather marked the turtle. The turtle is of the species commonly called the "Box Turtle," having the upper shell very crowning, and the lower shell, flat with a joint in the centre. The "venerable" gentleman, if the date is correct, must of course be upwards of 116 years old, and is said to be as active as any of the young fry of the same species which is generally to be met with.

"What's all the best on't," the farm upon which the present Mr. Worthington lives, has been in the possession of the four several *Jonathans*, and the "venerable" has always been found within a few rods of the same spot; which indicates that, whatever may have been his observations for the last century, his travels have not been very extensive.—The circumstance is somewhat singular, and is our motive for noticing it.

To those who are not aware of the longevity of the turtle it may be well to give an extract from "White's Natural History of Selborne," in which are some interesting facts in relation to the Tortoise Among others, to show its strength, it is stated that a common sized turtle would move with ease with a weight of 18 stone on its back, and that a cart wheel passing over the turtle gives it no apparent pain. In relation to the longevity of this "creeping thing" the following extract is from the work above-mentioned:

"From a document belonging to the archives of the Cathedral, called the *Bishop's Barn*, it is well ascertained that the tortoise at Peterborough must have been about 220 years old. Bishop Marsh's predecessors in the see of Peterborough had remembered it above sixty years, and could recognize no visible change. He was the seventh bishop who had worn the mitre during its sojourn there. If I mistake not, its sustenance and abode were provided for in this document. Its shell was perforated, in order to attach it to a tree, &c. to limit its ravages among the strawberry borders."

CINCINNATI, JULY 23.—*The Harvests.*—We learn from every part of the great Mississippi Valley, that the crops are most abundant and are generally saved. In Missouri and Illinois, the wheat is most remarkably fine.

In the eastern parts of Pennsylvania, and in Maryland, the harvest has turned out better than was expected. On the other hand, in Virginia and North Carolina there is a general complaint that the harvest is light and damaged.

NEW-YORK AMERICAN.

JULY 27, 29, 30, 31, AUGUST 1, 2—1833.

LITERARY NOTICES.

REMARKS ON THE UNITED STATES OF AMERICA, *with regard to the actual state of Europe*, by HENRY DUHRING: 1 vol. London; W. SIMPKIN & R. MARSHALL: Amsterdam, C. G. SULPKE: New York, W. JACKSON.—Another book upon America! we think we hear our readers exclaim. Even so—another book upon America, and by a reflecting scholar-like mind. The greatest problem concerning the happiness of man, here below, is now in the progress of solution, upon the greatest scale in these United States, the problem of "the capacity for self-government of educated man." Hence it is not to be wondered at,—at a period of universal peace, and when the mind of Europe is fermenting—when old abuses even there are losing their time-honored sanctity—and the youth at least of many countries are looking forward to such a condition of things, as will giveto active, stirring talent a free and fair field of exertion—that many eager eyes should be directed to this country, and much anxiety be felt to know what our real condition is. The writer of this little volume—so well printed as to be on that account attractive, independently of its contents—is, we infer from various sentiments scattered through its pages, a Dutchman, and a zealous adherent of the House of Orange. He however does not give any account of himself; and we are unable to give any account of him. His essays, for such in truth they are, on various political topics suggested by the condition and institutions of the United States—are written in a philanthropic spirit; and with a just perception—not a common attribute by any means of those foreigners who have treated of this country—of the operation and influence of our somewhat complicated scheme of state and federal governments. This is in no sense a book of travels. Indeed, but for some few casual expressions here and there, implying that the author speaks from personal observation, it is a book that might have been written without stirring from the Hague, or Amsterdam—except that from books alone, or conversation, it would be difficult to acquire such an insight into our system as is evinced by it. But there is no trace in these pages of the route of the traveller—of the precise time of his visit—nor of the regions which he visited. It is, as we said before, a series of philosophical essays—well written—justly reasoned for the most part—enforced by numerous quotations from American, English, French and German writers—the whole concluding with a discussion on "the golden age!" The titles of the different chapters—there are but eight in all—are as follow:

Chap. I.—Will the North American Union last?
Chap. II.—Examination of an Opinion somewhat prevalent in the Mother Country, that the want of an Established Church has produced want of Religion in the United States.
Chap. III.—On Washington, and his projected Monument in the City of Washington.
Chap. IV.—Some remarks regarding a Statement made by a very popular English Writer, that "the Women do not enjoy in the United States that Station in Society which has been allotted to them elsewhere."
Chap. V.—On Education, and its Connexion with Civil and Political Institutions.
Chap. VI.—On Emigration.
Chap. VII.—Some Remarks on Agriculture, and the Advantages which an Agriculturist, emigrating to the United States, has to expect here.
Chap. VIII.—On the Golden Age.

We cannot give a better specimen of this publication than by quoting the annexed extract, repelling the idea of the instability of the American Union:

That, however, the Union of North America is already making rapid strides towards its dissolution, which is so often asserted in Europe, is an opinion contrary to my judgment. Are not the different States which compose the Union linked together by the most intimate connexions; as, a common language; a common general character; the self-sufficing variety and luxuriance of their soil; their unbounded collective resources; the general activity, intelligence, and enterprising spirit, of their inhabitants; an unfettered interior commerce; the fondest recollections, and the happiest prospects; in short, by the strongest tie which ever kept a confederation together—their mutual interest?

That this mutual interest of of late been disturbed, by some restraints laid by the federal government on the foreign trade, is a fact of public notoriety. The right of the federal government to impose those restraints on foreign commerce, and to impose taxes beyond what is deemed necessary for the purpose of a national revenue, has not only been doubted, but openly denied. Whether, however, this opinion can be fully justified, I am rather inclined to doubt. The question is here not so much a question of revenue as of commerce; or, in other words, the federal government seems to have acted in this case, not so much in virtue of its power to impose taxes for the purpose of revenue, as in virtue of its authority to regulate and to protect commerce. The said government seems to have acted in the accordance to that principle, neither by reason nor by experience in the maxim, that the adoption of the rescrictive policy, by one or more nations, makes it the interest of others to countervail those foreign regulations, by reciprocating those restrictions. The chief question in the given case certainly is, whether by those commercial regulations, commonly called the tariff, the general interest of all the States, which to protect and to foster is the constitutional and only avowed object of federal government, has not been more destroyed than protected. If the enemics of the tariff should be able to prove that this tariff has been oppressive, unequal in its operations, and really detrimental to the interest and to the commerce of the whole Union—or that the participation in the benefits and in the burdens of the Union, has thereby indirectly been rendered unequal, with regard to all the States—then the true object of the Federal Government has thereby not been attained, and the tariff must be altered. After such a proof, any longer to enforce these commercial restrictions would be acting against the spirit of the Confederation, or against those concessions which were made by the several independent States, when for their general welfare, by way of compromise, they instituted the Federal Government. This Federal Government does not fulfil its duties, when it does not equally protect the rights of all the States: it always, more or less, steps out of its proper province, when, to relieve the inhabitants of some States that by false or untimely speculations may have entangled themselves in difficulties, it enforces commercial restrictions, which do not only deeply affect the well-being of other States, but which also, by alienating from each other the mutual affections of the Americans, are calculated to endanger the harmony of the Union.

To prevent the further spreading of the existing seeds of discord, and to regulate, to the satisfaction of all the States those mutual concessions which may be deemed of absolute necessity for the prosperity of some branches of industry, and which an independent nation ought always to cultivate, or on which too great a number of individuals depend already for their maintenance, this is of the greatest consequence for the federal government of the United States. It is obvious, however, that in the regulation of these conflicting interests the said government cannot proceed with too much caution.

Though at present it certainly would be connected with many and great difficulties, yet I entertain the strongest hope that, sooner or later, the government of the United States will gradnally iutroduce into practice the principles of free trade. No nation ever was in circumstances more propitious for such an act than the American. The debt of the United States is to be paid off within a very short lapse of time; and the annual national revenue promises to be beyond the wants of the federal government. Taxes of small amount will therefore be necessary for the future, to raise by their means a sufficient revenue; and it would perhaps be better if for this purpose another source were adopted. The Americans have so far surpassed all other nations in free institutions, that it has become their bounden duty also, to be the first of all nations that shall fully bring into practice the principles of free trade. This is a debt which they owe to mankind and to themselves.

As all branches of human industry work together to a mutual benefit, and jointly co-operate in the prosperity of each, so also will the different countries of the globe best increase their own wealth when they freely exchange the produce of their respective industry. Restrictive laws always interfere with the natural right of every citizen in applying his mental and bodily energy to such purposes as he may think most conducive to his own interest. In all industrious pursuits the partial protection of one generally means the oppression of another. By protecting one laborer by bounty, the government deprives others of their just rewards; or, in the false opinion to do good, it takes money from the pocket of one man to give it to another.

The experts of a nation cannot prosper without importation; both grow out of each other: so that we cannot reduce imports without also reducing some branches of exports. If, however, as above stated, the property of individuals is best secured by allowing them to follow their own inclination in the different modes of employing their stock of industry, should this same principle be less true with regard to large communities? What is a nation but a society of individuals?

Mr. Cullen justly remarks, "that if freedom of commerce was established, and no monopolies existed, those commercial revolutions which occasion so much distress in the manufacturing districts, by throwing out of employment a great number of workmen, would but seldom, if ever, happen; or be of short duration, and far less disastrous than they have often been." The rates of profit of manufacturers and merchants would then also be less uncertain, or only liable to those changes which are common to the whole productive industry of the country.

The restrictive policy of a nation may affect the interest of another nation, by excluding her from an accustomed and a profitable market; but is a retaliatory system calculated to diminish the evil?—Is it, on the contrary, not calculated to increase it?

An American, for instance, who has invested his capital in the production of grain, may suffer in his interest by the corn laws of Great Britain; but are his sufferings increased or diminished by a retaliation?—are they not increased? He suffered by being partially excluded from a good market; but he doubly suffers by imposing upon himself an additional sacrifice, in laying taxes on English manufactures, which to him are of indispensable necessity, and which he can no where else procure at the expense of so small a portion of his stock or labor. If retaliation did not affect home production and consumption, then it might be just: in all cases, however, where this happens it will but increase the evil; and the evil does not stop here. Such a restrictive policy is also calculated to produce a displacement of capital from its natural channel, by inducing men to establish manufactures that would afford no reasonable profits, if such a prohibitive system was not in existence. These manufactures being founded on an artificial basis, are therefore but a very precarious branch of industry; and exposed to all the vicissitudes of such an artificial existence. As in Europe such an artificial system, which dates from a period when political economy was but little understood, has been followed by almost all nations for centuries, the interest of the greatest number of industrious classes is so intimately connected with it, that it would lead to the greatest possible confusion and misery if this system, false as it is, were given up, and in its stead the principles of free trade were established. But if our freedom of commerce should be established amongst all nations—if so simple an act of common reason should be no visionary dream, then the respective interests of all nations would become thereby so interwoven, the bonds of mutual dependence and friendship would thereby be so much strengthened, that men but very seldom, if ever, would be exposed to the horrors of war; which if all nations were equally enlightened, and all men equally blessed with the divine gift of reason, would be a disgrace to mankind.

The Americans, with regard to a restrictive policy, are circumstanced very different from those of the Europeans. The United States form a young, and in all other respects free county, abounding in numerous resources, and where, if any sort of industry should cease to be profitable, the capital invested in it may far easier be withdrawn than in Europe. The evil occasioned by a restrictive policy in America may perhaps still be cured by a wise system, and gradual change of policy. The Americans, by leaving all experiments, whether a manufacture will yield profit or loss to individual enterprize, intelligence, and capital, would but act in strict conformity to the spirit of their Constitution, framed for the equal protection of all the States. The Federal Government, so eminently popular and enlightened, sooner or later will be forced, I think, to adhere to these principles; and when thereby the well-founded cause of the existing international animosities shall have been removed, then it will be difficult to persuade me that the Union is any longer in danger. The benefits of this Union to the Americans in general, are however already so great, that the disaffected members would be very unwise and unjust if they did not bear with resignation the actual existing differences in the equal division of the burdens and profits of the whole nation, till, by the irresistible force of reason, they will have carried the point in question, and be as unfettered in their foreign commercial transactions, so far as this will depend on them, as they actually are with regard to their internal commerce.

All the fruits of those distinguished talents which conducted the Americans to their elevated station—all those advantages which they derive from the finest situation and combination which on earth are to be met with—would be destroyed by a dissolution of the Union. Look on the map of the United States! what part of them would you separate from the others, without more or less disturbing the prosperity, the wealth, the influence, and the happiness of the whole? Wherefrom would these States derive that necessary protection for their far extending commerce, but from their united naval power? Wherefore were expended fifteen millions of dollars to France for Louisiana?—wherefore five other millions for Florida? Was it to create new customhouse-officers; or was it not to remove them to the utmost and natural boundaries of the Union? Are those vexations to which a merchant is exposed while carrying his goods along the rivers and roads of divided Germany, of so enviable a nature as to be thought worthy of imitation by a free and an enlightened people? Should the Americans already have forgotten the difficulties under which their commerce labored after the peace of 1785, before its regulation had been entrusted to the federal government? How boundless are not at present the markets for every industrious American, in whatsoever State of the Union he may have fixed the abode of his industry? What country is connected by so many, so easy, and such natural interior communications? And are not these natural and artificial bonds of the Union yearly increased, or brought to a greater degree of perfection? What was New Orleans under the Spanish Government?—a swampy village!—What is it now?—after New York, the first and most important mercantile city in the whole Union. The Americans *united* may defy all other nations,—*separated*, they are nothing! If, therefore, it should be permitted to suppose, as I think it is, that a sound judgment with regard to its true interest does or ultimately will prevail with a nation that perhaps excels all other nations in common sense—if one may also suppose that on such a nation the powers and intrigues of personal ambition or party spirit never will be permitted, at least for any length of time, to exercise their baneful sway—then one may entertain the opinion, I think, that the Union of North America will not be disturbed.

The sentiments and anticipations of this extract, long as it is, should be pondered by all Americans. It is the judgment of an impartial and enlightened observer.

Traveller's Directory, and Map of the United States. C. S. Williams, *New Haven*. New York: Betts & Anstice.—In a little duodecimo, thin and portable, we have here a map upon quite a tolerable scale, and well engraved and colored, of the United States; and a corresponding sheet of letter press, on which is presented a list of all the steamboat and canal routes in the country, with the distances between the intermediate places, the principal roads, the statistics of each State, the time at which each was settled, and the population of every separate county—all too for 75 cents. It is certainly a cheap treasure.

In a late Boston paper we find the following annunciation of a forth-coming volume of Poetry,—which, from the talent displayed, in several fugitive pieces, by the same author, we look forward to with pleasure.

Poetry.—An elegant volume of Poems by Grenville Mellen is about to be published by Lilly, Wait, & Co.—being the Martyr's Triumph, Buried Valley, and numerous minor pieces. The two we have named will be found, we think, to possess a character exceedingly interesting to the public and equally creditable to the accomplished author. Both are founded on fact; the latter upon the memorable avalanche in the Notch of the white Hill which occured a few years since. Mr. M., having passed several months in that vicinity, has made himself perfect master of both the history and scenery of that singular spot, and has wrought them into a story of thrilling interest. All the travelling parties which go in that direction this season, should consider this volume an indispensable *vade mecum*.

Boys and Girls' Library of Useful Knowledge, Vol. XIII. New York, J. & J. Harper.—This is the second part of the undertaking of the same author, to familiarize to young minds the Bible history, by throwing its striking incidents into familiar dialogues, adapted by their phraseology and simplicity to the comprehension of children. Volume IV of this series furnished the first part, and there is yet a third to come. The object is not "to supersede, but assist, the reading of the sacred volume," by imparting the explanations which are requisite to make that volume intelligible. It is executed with good judgment throughout.

The Life and Adventures of Dr. Dodimus Duckworth, to which is added *the history of a Steam Doctor*—by the author of a Yankee among the Nullifiers. 2 vols. New York: Peter Hill.—If the impositions and quackery of medical pretenders can be crushed by ridicule and humor—coarse enough in general, but sometimes quite amusing—these volumes might effect some good in that way. But they who trifle with life for a living, and assume to deal with the ailments and accidents of the human body, without knowing any thing of its structure or functions beyond what is revealed to every eye, can hardly be shamed out of their mischievous career.

View of the New York Quarantine—Staten Island.—A spirited and accurately colored engraving, executed by *W. I. Bennet*, has just been published by *Parker & Clover*, 180 Fulton street. It is true to the life and full of movement and animation.

Polynesian Researches, by *William Ellis*, in four volumes, vol. I. *Harpers*.—This is a judicious reprint of an English work that has received high commendation abroad. The tone of the book is good, and it is the most complete account of the South Sea Islands extant. The early institutions and the obsolete manners and customs, as well as those now prevailing in these countries, are, with every thing relating to their inhabitants, minutely detailed, their arts, manufactures, and antiquities being neatly illustrated with wood cuts, well printed upon fine hard paper.

There has always been much in these far-away islands of the Pacific to interest one in the accounts which, from time to time, have been given by voyagers of their beautiful scenery, their delicious climate and magnificent vegetation—of those wooded bays and mountain-circled friths, where the cathedral Aoa bends its mazy branches over calm blue waters, fenced by reefs of coral from the sea, and the palm and the cocoa rear their stately columns against a sky fitted to be the dome of such a chosen temple of Nature; where fruits and flowers succeed each other so rapidly, that seed time and harvest fall together, and jocund spring and mellow autumn unite in giving life and loveliness to the land; where

> "—— the leaf never dies in the still blooming bowers,
> And the bee banquets through the whole year on the flowers."

They seem—these remote and delicious spots—in this wandering æra of the earth, when every corner of it is ransacked and turned topsy-turvy, like a little world by themselves, which, if unmolested by visiters from less favored climes, would be the last resting point of man in his primitive state—a sort of jumping-off place for Poets and Romancers—where some Prospero might yet wave his magic wand through a spirit-peopled air, and some delicate minister of his will load, Ariel-like, the passing breeze with music. Certes, we know that were honest Will alive at this moment, he would "change the *venue*" of the Tempest from the salt-stewing Bermudas to the fairy land described below:

Every writer on the South Sea Islands has been lavish in praise of their scenery. Malte Brun observes, "A new Cythirea emerges from the bosom of the enchanted wave. An amphitheatre of verdure rises to our view; tufted groves mingle their foliage with the brilliant enamel of the meadows; an eternal spring combining along with an eternal autumn, displays the opening blossoms along with the ripened fruits." When speaking of Tahiti, he remarks, that it "has merited the title of Queen of the Pacific Ocean." The descriptions in Cook's Voyages are not exaggerated, and no scenery is adapted to produce a more powerful or delightful impression on the mind of those who traverse the wide ocean in which they are situated, than the islands of the South Sea. The effect on my own mind, when approaching Tahiti for the first time, will not easily be obliterated.

The sea had been calm, the morning fair, the sky was without a cloud, and the lightness of the breeze had afforded us leisure for gazing upon the varied, picturesque and beautiful scenery of this most enchanting island. We had beheld successively, as we slowly sailed along its shore, all the diversity of hill and valley, broken or stupendous mountains, and rocky precipices, clothed with every variety of verdure, from the moss of the jutting promontories on the shore, to the deep and rich foliage of the bread fruit tree, the oriental luxuriance of the tropical pandamus, or the waving plumes of the lofty and graceful cocoanut grove. The scene was enlivened by the waterfall on the mountain's side, the cataract that chafed along its rocky bed in the recesses of the ravine, or the stream that slowly wound its way through the fertile and cultivated valleys, and the whole was surrounded by the white-crested waters of the Pacific, rolling their waves of foam in splendid majesty upon the coral reefs, or dashing in spray against its coral shore.

So much for a sea-side approach to these floating edens that heave their verdurous bosoms above the bright Pacific as if they swam upon its silver surface; and now to contrast this glowing picture with an inland landscape:

In the exterior or border landscapes of Tahiti and the other islands, there is a variety of objects, a happy combination of land and water, of precipices and plains, of trees often hanging their branches, clothed with thick foliage, over the sea, and distant mountains shown in sublime outline, and richest hues; and the whole, often blended in the harmony of nature, produces sensations of admiration and delight. The inland scenery is of a different character, but not less impressive. The landscapes are occasionally extensive, but more frequently circumscribed. There is, however, a startling boldness in the towering piles of bassalt, often heaped in romantic confusion near the source or margin of some crystal stream, that flows in silence at their base, or dashes over the rocky fragments that arrest its progress: and there is the wildness of romance about the deep and lonely glens, around which the mountains rise like the steep sides of a natural amphitheatre, till the clouds seem supported by them—this arrests the attention of the beholder, and for a time suspends his faculties in mute astonishment. There is also so much that is new in the character and growth of trees and flowers, irregular, spontaneous, and luxuriant in the vegetation, which is sustained by a prolific soil, and matured by the genial heat of a tropic clime, that it is adapted to produce an indescribable effect. Often when, either alone, or attended by one or two companions, I have journeyed through some of the inland parts of the islands, such has been the effect of the scenery through which I have passed, and the unbroken stillness which has pervaded the whole, that imagination, unrestrained, might easily have induced the delusion, that we were walking on enchanted ground, or passing over fairy lands. It has at such seasons appeared as if we had been carried back to the primitive ages of the world, and beheld the face of the earth as it was perhaps often exhibited, when the Creator's works were spread over it in all their endless variety, and all the vigour of exhaustless energy, and before popnlation had extended, or the genius and enterprize of man had altered the aspect of its surface.

To enable them to enjoy these rich bounties of nature in all their fulness, the inhabitants of these islands are blest with a climate so bland and equable, that they can live without inconvenience in the open air through the greater part of the year.

The *Climate* of the South Sea Islands is in general regular, and though considerably hotter than in Europe, is more temperate than that of the East or

West Indies, or those parts of the continent of America that are situated in the same latitude. This is probably occasioned by the vast expanse of occean around : for though only 17 degrees from the equator, the thermomoter in the shade seldom rises higher than 90, while the general average in some of the Islands is not more than 74. During the time the Duff remained in Tahiti, from March to August, 1797, the thereometer was never lower than 65, and seldom higher than 73 : and between the months of April and August, 1819, it ranged in the morning from 68 to 78, at noon from 75 to 84, and in the evening from 70 to 78. Sometimes it rises for a short time much higher than 90, but I never saw it so low as 60. The heat is constant, and to a European debilitating, though much less so than that of an Indian climate. To the natives it is genial, and, except in the immediate neighborhood of their stagnant waters or marshy ground, is salubrious. They experience no inconvenience from the heat, and often, when the mornings have been gratefully cool to a European, they wrap themselves in their warmest clothing.

The climate is remarkable serene and equable ; its changes are neither violent, frequent, nor sudden.—This circumstance, were it not for the constant heat, would render it remarkably salubrious.

Mr. Ellis' view of the original sources of population to these islands is about as satisfactory as most of such speculations, without being as wild as those of some writers who would derive the Sandwich Islanders from the ancient Greeks because they wear helmets of woven feathers shaped exactly like an Athenian casque. The length of his theory, however, prevents our quoting it, as we have barely room to add this notice of a domestic trait :

Moral Disposition.—Next to their hospitality, their cheerfulness and good nature strike a stranger. They are seldom melancholy or reserved, always willing to enter into conversation, and ready to be pleased, and to attempt to please their associates. They are, generally speaking, careful not to give offence to each other : but though, since the introduction of Christianity, families dwell together, and find an increasing interest in social intercourse, yet they do not realize that high satisfaction experienced by members of families more advanced in civilization. There are, however, few domestic broils ; and were fifty natives taken promiscuously from any town or village, to be placed in a neighbourhood or house—where *they* would disagree once, fifty Englishmen, selected in the same way, and placed under similar circumstances, would quarrel perhaps twenty times. They do not appear to delight in provoking one another, but are far more accustomed to jesting, mirth, and humour, than irritating or reproachful language.

We must not take leave of this volume without mentioning that it contains some highly satisfactory and gratifying information in regard to the effect produced by the Christian missionaries upon the domestic habits of the Polynesians. *

THE COAST SURVEY is in steady progress under the capable hands of *M. Hassler*. We have before had occasion to applaud the appointment of this distinguished experimental Astronomer to conduct this national work, and to fortify our own opinion on that head by those of other and more competent judges : we now offer another proof in the annexed translation of an extract from the astronomical journal of M. Schumacher, in Altona, No. 239, page 385.

M. HASSLER is already since three years again in active employment for the general government of the United States of America ; at first for hydrometric experiments to establish proper regulations for the collection of the duties upon spirituous liquors, and for the comparison of the Weights and Measures of the United States, with a view to the future uniformity of the same.

By an act passed at the end of the long session of Congress, 1831–2, the law of 1817, excluding M. H. from the coast survey, (namely, that none but naval and military officers should be employed in it,) and which had the interruption of the whole work for its consequence, was abrogated, and liberty given to the Executive to appoint any superintendent whatever. Upon this, President Jackson re-appointed immediately M. H. to that situation, under the same arrangements as heretofore.

The Editor of this journal cannot omit herewith to present to the Government of the United States his thanks, in which all men who take an interest in exact science · · ' I join him, for having taken up again this beautiful work, that had been begun by M. H. 16 years ago. This work could certainly not be executed better by any other man than him, who in its beginning already had shown so much talent.—The freedom now given to him in the selection of his assistants, is an equally wise, and as the editor knows. by. his own experience of many years, an *indispensable condition of success.*

FOREIGN INTELLIGENCE.

TEN DAYS LATER FROM ENGLAND.—By the packet ship Roscoe, Capt. Rogers, we have English papers to June 25th. By the packet ship Rhone, there are French papers to June 18th.

The political intelligence is of some importance, though the commercial accounts have recently assumed a comparatively greater importance.

The bill for the abolition of West India Slavery has passed the House of Commons and been sent to the Lords. Upon the Irish Tithes bill, as in the slavery question, ministers had thought best to yield something of their plan, in order to secure co-operation. All departments of mercantile enterprise appear to be in a very satisfactory condition in England, and on the continent.

The brothers of Portugal are still looking each other in the face, but without any decisive conflict.

The French Chamber of Deputies has postponed the consideration of the treaty with the United States until another session. The Ministers seem never to have presented the subject to the Chambers until now. Marshal Soult, President of the Council, said in the Chamber of Deputica, that "Government had not the remotest idea of evacuating Algiers."

It is said that his Majesty, as the Head of the Church, has addressed a strong letter of remonstrance, through the Archbishop of Canterbury, to the Bench of Bishops, and especially to the six or seven who distinguished themselves by their vote on the Portuguese question, relative to their conduct under the present critical circumsta[illegible]s of the nation, expressing his surprise that they should expose themselves to the imputation of acting from factious and worldly motives,—thus sacrificing all claim to the respect of the religious community, and exposing the Church to the danger of losing its influence, by their being ultimately driven by the power of public opinion from their seats in Parliament, if their votes, as spiritual seers, were not regulated by more discretion and attention to the signs of the times !"—[Sun.]

CONSTANTINOPLE, MAY 28.—(By Express.)—Ibraham Pacha has really commenced his retreat, and preparations are making in the Russian camp, which indicate a speedy withdrawal of the troops. The official news that the Egyptian army had actually commenced its retreat arrived yesterday. The Reis Effendi immediately communicated it to the foreign Ambassabors, and Count Orloff repeated his declaration that the Russian army should retire as soon as he was certain that the Arabs really had retreated, or only had made a pretended retrograde movement. A Russian officer of the general staff has therefore, been despatched to Koniah, to learn the real intentions of Ibraham, and to be sure that he does not pretend to retreat, to give the Anti-Russian party a protext to demand the retreat of the Russian auxiliaries, which that party eagerly desires.

Prudence is therefore necessary, and Count Orloff cannot be blamed for desiring to free himself from all responsibility. The latter agreed with him, and Lord Ponsonby finds it natural that he should desire to be certain before he acts. Admiral Rousin dislikes delay, and says there is no doubt of Ibrahim's retreat.

LONDON 23d JUNE.—*Royal Institution.*—Friday evening Mr. Brockedon delivered a lecture upon the properties and present uses of caoutchouc, or Indian rubber, the former uses of which were only for the rubbing out pencil marks. It was introduced into this country about a hundred years since, and is now used for making water-proof clothes, and elastic materials of every description. It is particularly adapted to surgical bandages, and all materials where an equal pressure is required, which can be regulated by the wearer. The lecturer stated that he was much indebted for the substance of his lecture, and the materials furnished, to Messrs. Cornish & Co. of Holloway, who have a very extensive factory.—The cutting of the Indian rubber into fine threads is done by machinery, and so rapid are the effects of the machine, that two girls, by the aid of steam power, can cut into threads not much coarser than thick sowing thread, 240,000 yards per day, 80,000 yards of which weigh a pound. A curious experiment was also exhibited, the strengthening of rotten Indian rubber; a strand being dipped in a solution, immediately became perfectly strong. The lecturer stated, however, that his hearers might wish to have the knowledge of this secret. He was not acquainted with it, but the result was certainly most important to the professors of it. The machinery, and secret mode of strengthening the Indian rubber, although in the hands of Cornish & Co., he stated was the invention of Mr. Sievier, the sculptor.—Whale fishing lines, elastic cables, and ropes, were exhibited, and their utilities ably spoken of by the lecturer.

Daily Post from Paris.—The *Moniteur* has the following :—" A convention has just been signed between the Duke of Richmond, Postmaster-General in England, and M. Comte, Director of the French Post Office, establishing a daily communication between the two countries, instead of only four times a week. This treaty, besides affording a more frequent correspondence, will give an acceleration to the interchange of letters, and allow the mutual conveyance of intelligence from one country to the other in 36 hours, instead of taking three, and sometimes four days, as hitherto. This is a real benefit rendered to the two nations.'

According to the French savans who have accompanied the expedition to Algiers, the tribes of Berbers who inhabit the mountains of the lesser Atlas, from Tunis to the empire of Morocco, are the ancient Numidians described by Sallust; and are precisely the same, with regard to manners, customs and civilization, as at the period of the war of Jugurtha, more than a century before the Christian era.

Portable Theatre !—Mr. Faucit Savill has had constructed a portable theatre, capable of containing 800 persons. It is built of sheet iron, and may be taken asunder for conveyance from town to town, by van or wagon, without drawing a nail. Mr. Savill was to open it at Herne Bay on Friday with a respectable company.

On the 2d ult., at Paris, a bronze statue of Napoleon, made of sixteen cannon captured during his reign, was most successfully cast. A number of distinguished men of science and letters, and the Minister of Commerce and the heads of the public works, were present at the process. The statue is eleven French feet high, and in Napoleon's usual dress or drapery,—uniform, three cocked hat, eyeglass, sword, spurs,—so as to produce an exact resemblance in the *tout ensemble.* It was to be placed on the great column in the *place Vendome.*

EXPORTS AND IMPORTS.—A parliamentary paper, moved for by Mr. Spring Rice, has just been laid before the House of Commons, of a nature highly consoling to the balance of trade politicians. It is a return of the official value of the exports and imports of the united kingdom for the two last years. The return for the year ending 5th January, 1833, distinguishes the countries from and to which the exports and imports are made ; that for the year ending 5th January 1833, do not, only giving the totals, on account of the long time it would take to make out the details. The totals of the two years stand thus: official value of the imports into the united kingdom, for the year ending January, 1832, £49,727,180 ; of the exports, £71,431,491. In the year ending January, 1833, the official value of the imports fell to £44,586,241, whilst that of the exports rose to £76,071,572. Those who think that the annual balance of exports over imports shows a receipt of so much in hard cash, which we bank up for emergencies, must feel highly delighted at the result thus exhibited. If the fancy pleases them we should be loth to disturb their enjoyment ; but we must still do two things—first, recommend Miss Martineau's " Snoek and Vanderput" to their consideration ; and, second, beg them to inform us what has become of the millions of balances we have had in our favor for many years past ? The increase in the exports of the last year above-mentioned is shared in tolerably equal proportions between our own manufactures and colonial produce, the exports of foreign and colonial produce, in the year ending January, 1832, having been £10,745,126, and in the year ending January, 1833. £11,044,868, whilst the exports of British and Irish manufactures and produce were, in the corresponding periods, £60,686,-364, and £65,026,702. The country with which we have the greatest trade is the United States of America. In the year ending January, 1832, the amount of our exports to that eldest of our offspring was £12,596,173, and of our imports from her £8,970,-

342. Our next best customer, as far as exports are concerned, is Germany, which takes from us £9,473,627 worth of produce, of which £7,667,147 is the produce and manufactures of the United Kingdom. The value of our exports to India and China is £6,947,600, and of our imports thence £7,920,182. At the present moment it may be interesting to state, that our imports from the British West Indies amount to £8,448,839, while our exports amount to £3,988,286.—[London Sun.]

Mexico.—Accounts from Tampico have been received via New Orleans to July 4th. That place had been in a state of great excitement for several days, owing to information having been received that the garrison at Metamoras had declared in favor of the plan of Morelia, and that it had despatched a body of troops to take possession of Tampico, who had already arrived within a day's march of it. Tampico was in a poor state of defence, but every preparation was making to prevent their entry.

The Cholera had entirely disappeared from Tampico. A Conducta had arrived there on the 28th of June, with $700,000.

The following paragraph from the St. Louis (Mo.) Republican, of 12th inst., shews in a curious and quite characteristic manner, the influence which our ordinary political habits and institutions exercise, even upon a trading party in the heart almost of a wilderness:

From the Santa Fe Caravan.—Letters from some of our traders, as late as the 20th June, have been received in this city. They were then assembled at the Diamond Grove, about 160 miles from Independence, in this state. On the 19th, an election for officers was held. Mr. C. Bent was elected to the Captaincy; Messrs. Legrave, Barnes, Smith and Branch, Lieutenants. There were one hundred and eighty-four men belonging to the expedition, and ninety three wagons, carriages and dearborns attached to it, sixty-three of which were loaded with goods. The company had suffered very much from the badness of the roads, caused by the great rains which had fallen there, as every where else. We have understood, though the letter we have seen does not allude to it, that the traders are under the escort of a company of Rangers.

SUMMARY.

The gallant Bainbridge is no more. He died in Philadelphia on Saturday, in the 60th year of his age, after long illness. His funeral, which was to take place yesterday, was to be attended by all the officers of the Army and Navy on the Station, the officers of Militia, and the Civil Authorities and Citizens. So it should be; for the name of Bainbridge is of those that claim the fullest measure of gratitude from the country he so nobly served.

Commodore Chauncey, (says the National Intelligencer of Wed'sdav,) has arrived in this city, and proceeded to the discharge of his duties as one of the Commissioners of the Navy Board.

[*From the Missouri Republican.*]

St. Louis, July 16.—*From the "Far West."*—The Steamboat Assineboine, B. Pratte, jr. master, arrived on Thursday night last, from the mouth of the Yellow Stone, with a full cargo of furs, skins, &c. for the American Fur Company. By this arrival we learn, that the Steamboat Yellow Stone lost three of her hands and a pilot, by the cholera, while ascending the river, near the mouth of the Kansas. We also learn that Famine—a calamity more dreadful than the Cholera—threatens the inhabitants of the immense region of the Upper Missouri. No Buffalo had appeared upon the plains of that country during the past spring; and the Indians, in the thriftless economy which governs them at all times, were in consequence destitute of means of subsistence. Even the traders were compelled to subsist on Buffalo tongues, (obtained during a preceding season,) and corn; and the voyageurs had not this fare allowed to them. No one has, we believe, pretended to account for this disappearance of the immense herds of Buffalo which covered those regions. It was observed, by persons who were in the Assiniboine, and who have been in the habit of navigating the Missouri, that points at which vast numbers of Buffalo had always been known to herd, were deserted, or but a single one now and then seen.

A most bountiful Harvest has crowned the labors of the farmers of this State, and of Illinois. The Wheat crop has, generally, been secured, and is very abundant—far more than sufficient for the supply of the country.

Michigan Iron Ore—Within a few days past, has been discovered on the farm of the Rev. Mr. Armstrong, in the town of Nankin, Wayne Co. an extensive and rich bed of Iron Ore. We have seen a fair specimen of this ore, and believe it to be of a far more than ordinary quality.—[Detroit Courier.]

The Hon. Wm. J. Duane, Secretary of the Treasury, arrived in town on Monday evening, and has taken lodgings at Bunker's, Broadway.

The "Courier de la Louisiane," of the 13th inst. states that the two steamboats that carry the U. S. Mail between New Orleans and Mobile, have both burst their boilers. "The accident occurred to one in the beginning of the week, and to the other yesterday—we understand the engineer was killed, and two other men slightly wounded. The contractors, we hope, will immediately supply their places."

It appears from an official article in the Globe of yesterday, "that Port Lamar, formerly called Cobija, in Bolivia, has been declared free; it is situated at the mouth of the little river Salado, in the confines of the sandy desert of Atacama. Negociations have been pending between Bolivia and Peru, for the purpose of obtaining from the latter the cession of a narrow slip, along the Pacific, in which is situated Arica, a port possessing every advantage for the supply of Bolivia. But the Peruvians have hitherto proved inflexible, and determined to keep it, even at the risk of war, under the impression that, in the end, the whole commerce of their neighbors must centre in Arica. Bolivia now holds out the inducement of a free port at Port Lamar; and Peru will, probably, ere long, come forward with similar advantages to Arica."

The Cholera seems to have acquired fresh virulence in some of the Western cities. A letter from *Cincinnati* of the 25th inst. says, "The Cholera has burst upon us again with violence; the day before yesterday, we had upwards of 30 deaths,—and among them some of our best citizens, male and female. One of our first physicians now lies *in extremis*. He was attacked at 3 this morning."

The Chilicothe paper of 24th states that "within the last few days, there have been several cases of Cholera in our town and neighborhood."

On this side of the mountains we believe no Cholera at all exists.

The President of the United States left Washington on Friday on a visit to the Rip-Raps, the fortified artificial island near Old Point Comfort.

[*From the Richmond Enquirer.*]

Mr. J. Randolph of R.—We understand that Mr. Randolph's papers have been ransacked, and that no will of a later date has been found. The public curiosity has been so much excited upon this subject, that we may be excused for noticing the present state of the facts, as we understand them.

Judge Leigh is said to have in his possession, two Wills in Mr. R.'s handwriting—the 1st is dated in January 1822; the 2d in March 1832.

The 1st directs his slaves to be manumitted, and makes provision for their maintenance, and we believe removal, under the superintendence of Bishop Meade, and of Francis Key Esq.—and bequeathes the residuum of his Estate to Judge Leigh. This Will is said to have been subsequently "cancelled" by Mr. R., and his signature to have been cut out.

The second Will makes no provision for the manumission of his slaves—and its principal legacies are, 1. $10,000, to Judge Henry St. G. Tucker. 2. $10,000 to Judge Leigh. 3. $5000 to John Randolph Leigh, a young son of Judge L. 4. Gascoigne and a filly and some plate to Mr. John Wickham. 5. Two fillies and a pair of candlesticks, to Mr. Macon. 6. His carriages and horses, and some French plate to Dr. Brockenbrough—and the residue of his estate to the eldest son of his niece, Mrs. Bryant, of Gloucester, a daughter of Judge Coalter—with the reversion, in case of the death of the boy, about 20 months old, without heir, to the eldest son of Judge H. St. G. Tucker—and in case of *his* death, to the Judge's next son, &c.

This last Testament will probably be offered for Probate to the next Charlotte Court. It may perhaps be contested by the trustees for the slaves, upon the ground that the first will may be good—or, it may perhaps be contested by other parties, upon the ground, that neither of the Wills is good—and in this case that the whole property should be distributed according to the provisions of the Act of Assembly.

It is probable, indeed, that the subject may give rise to some litigation—in which case, it may become hereafter the duty of the Court of Appeals to decide the whole matter.

Destructive Fire at Waterford!

(Correspondence of the Evening Journal.)

Waterford, (Saratoga Co.) July 26.

We have just subdued one of the most ruinous fires which has ever been visited upon our village. Almost the entire part of the town, upon which our extensive *mechanical* and *manufacturing* operations were carried on, is now in ruins. The loss is immense, and falls almost entirely on that enterprizing class of our citizens which constitute the life of all our business operations. The fire was discovered in the new machine-shop of Kimball & Co. about 2 o'clock this morning, and before the citizens had collected to much extent, the roof had tumbled in, and the fire had communicated to the shop of Messrs. King, Wing & Co. on the south, and Messrs. Olney, Ambler & Minor on the north; the last contained about 8000 dollars' worth of machinery—loss very heavy. From thence it caught to the roof of Waterford Cotton Factory, and raged with such violence, that before we could arrest its progress, the two upper stories, with almost the entire machinery, and much valuable property, was either consumed or dashed to pieces, in the attempt to save it from the devouring element. The walls of this great building remain almost unbroken, only to give prominence to the surrounding desolation. The Fire Engine Manufacturing Company, are sufferers to a considerable extent, say in all, four or five thousand dollars.—The company of Olney, Ambler & Miner, about $ 10,000: Mr. Blake, $2000; and the Cotton Factory $15,000: besides, some eight or ten different branches, which were carried on in the same buildings, of more or less importance. The loss amounting in all to from forty to fifty thousand dollars.

About four hundred industrious mechanics are dependent upon the mercy of the public for employment in consequence of the fire. J. H.

Almost Caught.—The sloop Fame, commanded by Capt. P. C. Myrick, an old whaler, with a picked company of experienced officers and seamen, sailed this morning on a whaling cruise in Massachusetts Bay; principally for the purpose, however, of determining the question of the existence of that celebrated nautical non-descript, the Sea-serpent: which question, if affirmatively decided, will immediately be followed by his capture, dead or alive. Sharp eyes, that from long practice cannot be deceived, have gone to look after him; and sharper weapons, to be wielded by muscles and nerves that have been accustomed to grapple with Leviathan, are prepared for his certain overthrow. The Fame has a complement of 14 skilful men, and carries two whale boats, with every sort of apparatus for encountering any manner of monster which may dare to show itself. Among the implements of destruction on board, are sundry harpoons of a new construction, (for which a patent has been granted to a gentleman of this place) made at the Phœnix Iron Foundry, Providence—one thrust from which will inflict instant death. This description of harpoon carries within its barb, a dose of concentrated poison, the most subtile which human science has yet been able to discover. With these preparations, we have not the slightest doubt that a most satisfactory account of the serpentine giant will very shortly be rendered—provided nevertheless, there *be* such a creature, inhabiting the waters of this region.—[Nantucket Inquirer.]

Our readers will be gratified to learn, by the following extract from the Boston Daily Advertiser, that young Frothingham who disappeared so strangely from the Oneida Institute, in April last, has been heard from.

Mr. Frothingham.—This gentleman, whose disappearance from the Oneida Institute a few months since was made the subject of much public comment, as he was supposed to have perished, has recently been heard from. Letters from him, dated Liverpool, May 27, are published in the Salem Gazette. He states that owing to the effect of close application, at the institution, he felt occasionally that his thoughts were wandering. About the 5th of April, this occurred more frequently than before, and he knows not how he spent much of the time between that date and the 8th. After the 8th, he observes that every thing is confused in his recollection. He remembers only, that, finding himself in a strange place, he inquired where he was, and was answered in Montreal. He remembered nothing farther until he found himself, in May, on board a vessel bound from Quebec to Liverpool. He appears to have wandered for a considerable time, and to have embarked for England without any consciousness of what occurred.

Scarlet Fever.—In looking over a recent publication on the diseass of the skin, we have found the observations mentioned below, on the subject of preventing an attack of the Scarlet Fever. Although we do not place implicit faith in its property of prevention, still the respectability of the author, and the fair opportunity now offered in this community of testing its virtues, induces us to make the translation.

As a preservative means from Scarlet Fever, *belladonna* has been proposed and employed with success in Germany and Switzerland. M. Biet, (Doctor of Medicine, Physician of St. Louis Hospital, Paris, Member of A. R. of Medicine, &c., &c.) has seen this disease, raging epidemically in the high valley of Switzerland, respect, almost without any exception, all the children to whom belladonna had been administered. We should not then hesitate to have recourse to it, ere it becomes epidemic in a village, town, &c.

The tincture is the preparation the most convenient, and the form under which it seems to act with most efficacy. It is given in doses of six drops daily to children of eight or ten years—augmenting or diminishing the dose, according to age, &c. of each individual. It is generally necessary to continue the use during ten or twelve days. It has moreover been established in an evident manner, that in the small number who have not been preserved from the Scarlet Fever by the balladonna, the attack was always simple, benign, and of little duration.—[Georgia Farmer.]

A Western Warrior.—" The western warriors, in full dress, as for a great dance, wear two or three clasps of silver about their arms, generally jewels in their ears, and often in the nose. In fact, it is as common among these tribes to see a thin circular piece of silver, of the size of a dollar, hanging an inch or two from the nose, as it was among the ancient Indians to see a piece of carved bone or stone in the same situation. Then painted porcupine quills are twisted in the hair. Tails of animals swing from the ears behind. A necklace of bear's or allegator's tooth, or claws of the eagle. or red bears; or, if nothing better can be had, perhaps a string of red thorn-plums, hangs from the neck. The brass bells are laid thick on the lower part of the dress. Add to all this finery an American hat, and a soldier's blue coat faced with red, and your modern Indian *dandy*, stepping firmly on the ground to give his tinklers a fair chance to sound together, apparently regards his attractions with as much complacency as the human bosom can be supposed to feel."—[Thatcher's Indian Traits.]

A Lady of the Old Court.—Lady Sundon is dead and Lady M—— disappointed: she, who is full as politic as my Lord Hervey, had made herself an absolute servant to Lady Sundon, but I don't hear the she has left her even her old clothes. Lord Sundon is in great grief: I am surprized, for she has had fits of madness ever since her ambition met such a check by the death of the queen. She had great power with her, though the queen pretended to despise her; but had unluckily told her, or fallen into her power, by some secret. I was saying to Lady Pomfret, 'To be sure she is dead very rich !' she replied with some warmth, 'She never took money.' When I came home, I mentioned this to Sir R. 'No,' said he, 'but she took jewels; Lord Pomfret's place of master of the horse to the queen was bought of her for a pair of diamond ear-rings, of fourteen hundred pounds value.' One day that she wore them at a visit at old Marlbro's, as soon as she was gone, the duchess said to lady Mary Wortley, 'How can that woman have the impudence to go about in that bribe? 'Madam,' said lady Mary, 'how would you have people to know where wine is to be sold unless there is a sign hung out ?' Sir R told me, that in the enthusiasm of her vanity, Lady Sundon had proposed to him to unite with her, and govern the kingdom together: he bowed, begged her patronage, but said he thought nobody fit to govern the kingdom but the king and queen.—[Sketches of the Court of England, (1741,) by Horace Walpole.]

An Estimate of Sir Robert Peel's Character.—All eyes seem to be at this moment turned to the part which Sir Robert Peel is acting, and is about to act. The tories, judging from the undisguised language of some of their organs, seem to be ready to break out into open hostilities with him; while the whigs approach him in a tone of adulation, the motives and the expectations that give rise to which cannot be misunderstood. On the one hand the friends of ministers do not hesitate to give out that the right hon. baronet is on the eve of joining them; a report, which, on the other hand, many of the warmest of his friends and admirers are not less anxious as flatly and unequivocally to contradict. On which side the truth lies, we, of course, have no means of deciding; but this we know, that men of far more transcendent talents than Sir Robert Peel possesses have ere now neutralized their consequence, and sunk into comparative littleness, by sacrificing to the love of power and place their character for political consistency and integrity. Though we have never been among the ardent admirers of Sir Robert Peel, we are not the less inclined to concede to him the full meed of reputation for the qualities which he really possesses. To the character of a statesman in a large and comprehensive sense he has but few claims. His real merits consist in an unblemished private character, great knowledge and expertness in the tactics of debate, and a business-like knowledge of details which few public men of the present day have either had the opportunity or been at the pains to acquire. As a Home Secretary it is no great praise to say that he immeasurably surpassed his successor; while as a law reformer he was little more than the machine of others, with minds like his own, far from being in advance of the spirit of the age. Yet in the dearth of public talent into which the country has unhappily fallen, (for, whatever there may have been in past times, there are no giants in these days,) we are free to confess that Sir Robert Peel is a man who is entitled to occupy no inconsiderable space in public estimation, and that the public are naturally interested in the course which he is likely to pursue. —[Morning Herald.]

Surprising Horsmanship.—On the morning of the 20th, Captain Parker, of the Royal Artillery, quartered at Charlemont, rode his bay horse, the Admiral, from Charlemont to Newry and back in 2 hours and 25 minutes—a distance of 53 English miles.—The time allowed for the performance was three hours; but the captain having got considerale odds that he would not do it in two hours and a half, won all his bets by having five minutes to spare. Thus did he accomplish the astonishing distance of 21 miles an hour with one horse, which exceeds, by far, all feats of horsemanship ever performed in the sporting world.—[Dublin Evening Packet.]

Beech Trees proof against Electrical Fluid.—A correspondent of the American Farmer states, that it is a very common opinion among surveyors and woodsmen of the western states, that the beech tree possesses the non-conducting power ascribed to the cedar; "I presume," says he, "I have passed a hundred oaks which have been stricken, and although beech is more common than any other timber, I have not discovered one of that kind."

The Commeree and Navigation of Massachusetts.—The shipping of this State is more numerous than that of any State in the Union, and in the extent of its foreign commerce, it is second only to New York. The value of imports into the State during the year ending Sept. 30, 1833, was $18,118,800, of which 17,670,184 in value, were imported in American vessels. The value of exports from the State in the same year, was 11,993,768, of which 4,656,635 in value, was of domestic produce. The amount of shipping owned in the State, and employed in the foreign and coasting trade, and in the fisheries, on the last day of December, 1831, was 442,676 19 tons—it being 4,837 78 tons greater than the amount owned and employed in the business in the state of New York.

The fisheries were formerly considered of greater importance than all the other maritime interests of Massachusetts. They are still important, and the state continues more extensively engaged in them than all the other states of the Union. The shipping in this state employed in the fisheries on the last day of December. 1831, amounted to 142,733 74 tons, of which 69,055 51 tons were engaged in the whale fishery, 38,724 88 tons in the cod fishery, and 34,943 32 in the mackerel fishery.

Of the shipping of Massachusetts, 17,659 tons belong to the district of Newburyport, 1,567 to Ipswich, 12,838 to Gloucester, 25,539 to Salem, 6,914 to Marblehead, 138,174 to Boston, 17,877 to Plymouth, 3,899 to Dighton, 64,049 to New Bedford, 26,857 to Barnstable, 2520 to Edgartown, and 24,978 to Nantucket.—[Taunton Gazette.]

We have more than once adverted to a novel, and what we cannot help considering, an un-English (*quera*, American ?) practice which has risen up of late years,—that of public meetings being held, apparently for no other purpose but that of enabling the leading persons attending them to bespatter themselves with praise, and move votes of thanks to each other. The fulsome speeches which we hear delivered in men's presence, when their healths are toasted at public dinners, are bad enough—though here the well known adage, "that wine and wit do not always flow in equal currents," may afford some excuse; but there is none for the practice prevailing a more sober meetings, and least of all, at meetings connected with religious subjects, at which minds rightly constituted must look, we should hope, to some quieter and more valuable satisfaction than personal flattery can bestow. As a specimen of the bad taste we allude to, we would refer to the proceedinds of "the Society for Building Churches," which appeared in our columns on Saturday, where Lords, Bishops, and Deans, seem to have vied with each other in their race of mutual adulation.

But perhaps, after all, a useful moral may be drawn from the instance of bad taste which we have alluded to, and that the persons in question, in putting themselves thus forward as a specimen of their own sublime, mean to furnish a striking proof that "all is vanity."—[London Paper.]

Balsam of Mecca.—The balessan, balm, or balsam of Mecca, (*Balsamodendron Opobalsamum*,) belonging to the family *Burseqrceæ*, is a native of the eastern coast of Abyssinia, especially at Azab, and as far as the strait of Babel Mandeb. Bruce says, it is a small tree about fourteen feet high, with scraggy branches and flattened top, like those which are exposed to the seaside blasts; the appearance is consequently stunted, and the leaves are beside small and few. He supposes that it was transplanted to Arabia, and there cultivated at a very early period. This was the *Balsamum Judaicum*, or Balm of Gilead of antiquity and of the sacred writings, it being supposed at one time to be produced only in Judea. It seems, however, to have disappeared from that country, and the supply to have proceeded from Arabia. Many fables are connected with it. Tacitus says, that the tree was so averse from iron that it trembled when a knife was laid near it, and it was thought the incision should be made with an instrument of ivory, glass, or stone. Bruce was told by Sidi Ali Taraboloussi that "the plant was no part of the creation of God in the six days, but that in the last of three very bloody battles which Mahomet fought with the noble Arabs of Harb, and his kinsmen the Beni Koreish, then pagans, at Beder Hunein, Mahomet prayed to God, and a grove of balsam-trees grew up from the blood of the slain upon the field of battle; and that with the balsam which flowed from them he touched the wounds of those oven that were dead, and all those predestined to be good Mussulmans afterwards immediately came to life." To return to the balsam-tree: the mode of obtaining it remains to be described. This, according to Bruce, is done by making incisions in the trunk at a particular season of the year, and receiving the fluid that issues from the wounds into small earthen bottles, the produce of every day being collected and poured into a larger bottle, which is kept closely corked. The smell at first is violent, and strongly pungent, giving a sensation to the brain like to that of volatile salts when rashly drawn up by an incautious person. The natives of the East use it medicinally in complaints of the stomach and bowels, as well as a preservative against the plague; but its chief value in the eyes of oriental ladies lies in its virtues as a cosmetic,—although, as in the case of most other cosmetics, its effects are purely imaginary. [Edinburgh Cabinet Library, No. XII.—Nubia and Abyssinia.]

LARGEST TREE IN THE WORLD.—The boabab or monkey-bread (*Adansonia digitata*) is the most gigantic tree hitherto discovered. The trunk, though frequently eighty feet in circumference, rarely exceeds twelve or fifteen feet in height; but on the summit of this huge pillar is placed a majestic head of innumerable branches fifty or sixty feet long, each resembling an enormous tree, densely clothed with beautiful green leaves. While the central branches are erect, the lowest series extend in a horizontal direction, often touching the ground at their extremity; so that the whole forms a splendid arch of foliage, more like the fragment of a forest than a single tree. The grateful shade of this superb canopy is a favorite retreat of birds and monkeys; the natives resort to it for repose, and the weary traveller in a burning climate gladly flies to it for shelter. The leaves are quinate, smooth, resembling in general form those of the horse-chesnut. The flowers are white and very beautiful, eighteen inches in circumference. The fruit, which hangs in a pendant manner, is a woody ground-like capsule, with a downy surface, about nine inches in length and four in thickness, containing numerous cells, in which brown kidney-shaped seed are embedded in a pulpy acid substance. The timber is soft and spongy, and we are not aware that it is used for any economical purpose. It is very easily perforated, so that, according to Bruce, the bees in Abyssinia construct their nests within it, and the honey thus obtained, being supposed to have acquired a superior flavor, is esteemed in preference to any other. A more remarkable excavation is however made by the natives; diseased portions of the trunk are hollowed out and converted into tombs for the reception of the bodies of such individuals as, by the laws or customs of the country, are denied the usual rites of interment. The bodies thus suspended within the cavity, and without any preparation or embalmment, dry into well preserved mummies. The juicy acid pulp is eaten by the natives, and is considered beneficial in fevers and other diseases on account of its cooling properties. The duration of the boabab is not the least extraordinary part of its history, and has given rise to much speculation. In it we unquestionably see the most ancient living specimens of vegetation. 'It is,' says the illustrious Humboldt, 'the oldest organic monument of our planet;' and Adanson calculates that trees now alive have weathered the storms of five thousand years.—[Edinburgh Cabinet Library. No. XII.—Nubia and Abyssinia.]

[*From the Hampden Journal, Springfield, Mass.*]

"VALUABLE TURTLE."—In the year 1816, Mr. Jonathan Worthington, of West Springfield, found a Turtle upon his premises which had "J. W. 1717" marked—evidently cut with a penknife—upon the under shell. The Turtle was set at liberty, after examination, and again found in 1823; again in 1828; again in 1829; and a few days since in 1833. The father, grandfather, and great grandfather, had the same given name, with the present *Jonathan* Worthington, who thinks that the great grandfather marked the turtle. The turtle is of the species commonly called the "Box Turtle," having the upper shell very crowning, and the lower shell, flat with a joint in the centre. The "venerable" gentleman, if the date is correct, must of course be upwards of 116 years old, and is said to be as active as any of the young fry of the same species which is generally to be met with.

"What's all the best on't," the farm upon which the present Mr. Worthington lives, has been in the possession of the four several *Jonathans*, and the "venerable" has always been found within a few rods of the same spot; which indicates that, whatever may have been his observations for the last century, his travels have not been very extensive.—The circumstance is somewhat singular, and is our motive for noticing it.

To those who are not aware of the longevity of the turtle it may be well to give an extract from "White's Natural History of Selborne," in which are some interesting facts in relation to the Tortoise Among others, to show its strength, it is stated that a common sized turtle would move with ease with a weight of 18 stone on its back, and that a cart wheel passing over the turtle gives it no apparent pain. In relation to the longevity of this "creeping thing" the following extract is from the work abovementioned:

"From a document belonging to the archives of the Cathedral, called the *Bishop's Barn*, it is well ascertained that the tortoise at Peterborough must have been about 220 years old. Bishop Marsh's predecessors in the see of Peterborough had remembered it above sixty years, and could recognize no visible change. He was the seventh bishop who had worn the mitre during its sojourn there. If I mistake not, its sustenance and abode were provided for in this document. Its shell was perforated, in order to attach it to a tree, &c. to limit its ravages among the strawberry borders."

SNOW SHOES.—"They are about three feet long, and a foot wide in the broadest part. Little sticks placed across at 5 or 6 inches from each end, serve to stregthen them. A net-work of twisted deer-skin, cut into strips, is fastened to the frame, and to this the foot is confined by means of strings of the same material. The snow-shoe used for travelling over a hilly country is turned up at the end, and pointed. To walk well upon these long and broad bottoms requires as much practice as it does to navigate a canoe. The knees must be turned a little inward, and the legs kept wide asunder, and the strain of the strings is such that a white man never puts them on to wear for a day without suffering what is called the 'snow-shoe evil.' An Indian will travel with them forty miles a day and sometimes more."

THE DOG-TRAIN.—It is a light frame of wood, covered round with a dressed skin. The part in which the feet go are lined with furs, and is covered in like the forepart of a shoe. The bottom is of plank, about half an inch thick, and some inches longer than the train, and an inch or two wider. In this carriage a woman may sit quite comfortably, and can take a child in her arms, while her driver standing on the part of the frame which runs out behind, gives the word to his dogs. These, when well trained, will trot off 40 miles a day over the snow crust.—[Thatcher's Indian Traits.]

POETRY.

AN OBJURGATORY EPISTLE.

"*Non tecum possum vivere, nec sine te.*"

MADAM.—I mean, dear Laura—no, I don't;
  I mean—what matters it? you know my meaning;
I have your letter, and it is my wont
  To show to courtesy a proper leaning;
Therefore I write; think not I own your power,
  Nor call thy sex's practised arts about thee,
Because I said in love's unguarded hour,
  "There is no living with thee or without thee."

You promised never to offend me more—
  Ah! thou deceitful one!—and vow repentance;
You say your always thought Delmaine a bore,
  And beg me to recall my cruel sentence.
An oath! an oath! I have an oath in heaven,
  Were all that's faithful, treacherous girl, about thee,
These words should never from my breast be riven,
  There is no living with thee or without thee."

What! shall I sit with half-averted face,
  While every pulse with rage and shame is beating,
To see that puppy basking in your grace,
  While your cold glance meets my eye's silent greeting.
Must I endure to see each emptiest head
  A walking piece of furniture about thee?
Good Good! to think I ever should have said,
  "There is no living with thee, or without thee."

No—by those golden hours so swiftly past,
  By those bright smiles you gave me when you won me—
By all the hopes I set upon the cast,
  By the fond, foolish heart that has undone me,
By all those bitter banquets tears have brought,
  By all that once was dear and loved about thee,
I swear to banish from my heart the thought,
  "There is no living with thee, or without thee."

O Laura, if you ever drew a sigh,
  How could you thus affection's bond dissever?
How could you every woman's engine ply
  To rack a heart would have been yours for ever?
Then that abhorred Delmaine! to see the jay
  Strutting in all his finery about thee,
And (grant me patience!) hear you laughing say,
  "There is no living with thee, or without thee!"

In vain you strive to bring me to your lure,
  In vain pour forth a thousand false professions,
In vain protest your love shall still endure,
  And blot with artful tears your feigned confessions.
No more shall woman's tears or smiles ensnare
  A breast whose wishes ever dwelt about thee;
Though, vexed by your caprice, I used to swear,
  "There was no living with thee, or without thee."

E'en as the closing steel now parts in twain
  The silken band from which so long depended
The mimic partner of thy wayward reign,
  Torn are our ties, my dream of love is ended.
Take it; I cannot wear that portrait now,
  'Twill grace, no doubt, some dangling fop about thee;
Let other lips in pettish fondness vow,
  "There is no living with thee, or without thee."

Ah! fair, but false one! 'tis thyself indeed;
  Too true an image of thy syren beauty;
There breathes the form I deemed the highest meed,
  Could smooth the toilsome path of rugged duty.
Thine's the arch smile that lurks in every feature;
  That air of witching coquetry about thee:
Come to my heart, thou dear, tormenting creature,
  "There is no living with thee, or without thee."

[FOR THE NEW YORK AMERICAN.]

"*I'll hold thee any wager*
"*When we are both accoutred like young men,*
"*I'll prove the prettier fellow of the two.*"

Ah! Pelham, hast thou found thy way
  From London to New York,
In Broadway can'st thou deign to stray,
  Or on the Battery walk?

How you must miss your satin shoes,
  Your broidered wrapping-gown,
Your tepid baths, your billet doux,
  In that half savage town.

I pity you, upon my soul,
  I know not what you'll do;
Are you an amateur in coal,
  In pictures old or new?

Can you turn Broker, learn to shave,
  Sell Hock, Sauterne, Chateau,
Or speculate in Stocks, or rave
  Of Gold Mines—Railroads?—No.

What brought you here? You'll surely starve
  In this commercial town;
Can you a haunch of Venison carve,
  Or swallow Turtle down?

A Politician—are you still
  An honest Democrat?
A Federalist, then?—What e'er you will,—
  Something you must be at.

To give America her due,
  I've always had a notion,
(Perhaps my theory's not new,)
  She is perpetual motion.

On goes the tide, down hill and up,
  Around in each direction;
One night with wealthy men will sup,
  Next—witness their defection.

The rich, the poor, the great, the small,
  All have some point to carry;
Some work, some beg, some thrive, some fall.
  But all end thus—they marry.

Then, Pelham, if you scorn a trade,
  Some wealthy damsel fetter,
And if Papa his will has made
  And gone—so much the better. ELLA.

NOVELTY WORKS,
Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis. Eng. M. & H. R. R. Co, Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.
Hudson, Columbia county, New-York, }
January 29, 1833. } F31 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.
Baltimore, May 1st, 1832.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Rail road Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m25

MARRIAGES.

On Thursday last, in St. John's Church, by the Rev. John F. Schroeder, Robert H. Cuming, to Louisa Waring Fisher, eldest daughter of the late John P. Fisher.

On the 22d inst. by the Rev. Dr. McMurray, Mr. Josiah Higgins, (of the State of Maine,) to Miss Jane Gibson, of Scotland.

On Wednesday evening last, by the Right Rev. Bishop Onderdonk, B. F. Meakings, of Mobile, to Elizabeth C., only daughter of Peter Taylor, Esq. of this city.

On Wednesday evening, by the Rev. Dr. Cone, Mr. John P. Scipio Hassler, to Miss Clarissa Conrad, daughter of Ephraim Conrad, Esq.

On Thursday evening, by the Rev. A. Maclay, Mr. Wm. Cobb, to Miss Helen Dunn.

On 25th instant, by the Rev. Mr. Lyme, John T. Fleming, Esq., of Goochland, (Va.) to Miss Indiana, daughter of the late William Bowdell, Esq., of Petersburg.

On Friday evening, Mr. William Bell, to Miss Jane Davies.

At Newburg, July 25th, Samuel L. Gilpin, of New-York, to Elizabeth, daugher of Thomas Morton, of Newburg.

In Northampton, Mass. Mr. Benjamin Pierce, Professor at Harvard University, to Miss Sarah H. Mills, daughter of the late Hon. E. H. Mills.

On the 20th ult. at New Orleans, Dr. George F. Black, to Miss Mary Y. Oliver, daughter of Douglass Oliver, Esq. of Anderson county, Tenn.

On Thursday, the 25th inst. at Brooklyn, by the Rev. D. Carroll, Adrian Lott, to Miss Sarah Butler, adopted daughter of Silas Butler, Esq. U. S. Navy.

At Newburgh, on Tuesday, July 25th, by the Rev. Mr. Brown, Samuel G. Gilpin, of New York, to Elizabeth, daughter of Thos. Morton, of the former place.

On the 9th inst. at Morristown, N. J., by the Rev. Mr. Huber, the Rev. Dr. F. A. Rauch, Professor in the Theological Seminary of the German Reformed Church, York, Pa., to Miss Phœbe S., daughter of L. Moore, Esq. of the former place.

In Lenox, Mad. Co., on the 10th inst., by the Rev. Geo. Foote, Maj. B. Franklin Bruce, to Miss Eliza A., daughter of Dr. Nathaniel Hall, all of that place.

In Canajoharie, Mont. Co., on the 10th inst., by the Rev. F. W. Lake, Mr. Jarvis N. Lake, Counsellor at Law, of Little Falls, Herkimer county, to Miss Jane A., daughter of Dr. Simeon Marcy, of the former place.

On the 20th ult. at St. John's Church, Stamford, Conn., by the Rev. Mr. Todd, Thos. M. Harvey, to Ellinor Joanna, daughter of Henry Reed, of this city.

DEATHS.

Yesterday afternoon, Ann Maria, youngest daughter of Capt. Saml. J. Waring, aged ten years.

On Tuesday, 23d inst. in the 8th year of her age, Elizabeth Columbia, daughter of Aaron C. and Mary Burr.

Last evening of a lingering illness, in the 27th year of her age, Elizabeth, wife of Joseph Washburn, and daughter of Samuel Pickett.

This morning, Mrs. Hellen Crighton, consort of the late John Crighton, in the 82d year of her age.

This morning, William Henry, youngest son of Charles I. Howell.

Suddenly, on Thursday evening, Grace Walton, eldest daughter of the late Edward Lyde.

This morning, Peter Roosevelt, Esq. in the 71st year of his age.

Thursday morning, 25th July, William Hartshorne, in the 85th year of his age.

Wednesday evening, 24th July, Charles, the infant son of Charles Keeler.

On Monday, 22d inst. Benjamin Franklin, infant son of E. B. & M. Clayton, aged five months.

This morning, (Wednesday,) Ann Seabury, wife of David Seabury, in the 81st year of her age.

On Saturday evening, John W. Low, in his 25th year, eldest son of H. P. Low, of Baltimore.

On Saturday, Wm. Henry, son of Charles J. Howell.

On Friday, George Edwards, a colored man, aged 40.

At Saybrook, Ct. on 24th inst. at the house of her son-in-law the Rev. J. M. Guion, in her 71st year, Elizabeth, wife of John R. Wheaton, of this city.

In Pittstown, Rensselaer county, on Sunday, the 1st inst. John C. Dyre, in the 34th year of his age.

At Philadelphia, Dr. John Lange, aged 68; Adam Brunce, 77; Clara Deborah Bilver, 89; Edward Burd, 83; James Hunter, 42.

At St. Louis, Missouri, July 14th, in the 25th year of his age, Charles T. Parker, a native of Boston, and a member of the Missouri Bar.

In Stafford County, (Va.) on the 19th instant, Mrs. Agatha Eliza Cooke, wife of Gen. George M. Cooke, and daughter of the late Hancock Eustace, Esq.

At Cary's Brook, in the County of Fluvana, (Va.) on the 16th instant, Mrs. Catharine Harrison, consort of Archibald M. Harrison, Esq., and daughter of the late Major Henry Heth, of Blackheath, in the county of Chesterfield.

On the 9th inst. at Pittsburgh, (Pa) after a few weeks illness, Mrs. Mary Elizabeth Shoenberger, wife of Mr George Shoenberger, daughter of Wm. L. Vanzandt, of New-York, in the 19th year of her age.

At her late residence on the East River, on Monday afternoon, Mrs. Lydia Beekman, wife of James Beekman, Esq. aged 68 years.

On board the schooner Premier, on the passage from Tampico, the 19th inst., Sandford M. Worth, of Long Island, in the 16th year of his age.

At New-Orleans, July 11th, after a short illness, Major Saml. Spotts, Surveyor of the Port of New-Orleans.

In Baltimore, on the 6th inst., FRANCOIS AUGUSTIN DU BOIS MARTIN, aged 91. The deceased was a native of Barbesieux, in France, and was educated for the army, where he served until the early part of our revolutionary struggle with Great Britain, when inspired by the enthusiastic love of liberty then awakening in his native country, and informed of the difficulties the Marquis de Lafayette had to encounter in obtaining a conveyance to the American Colonies, he readily volunteered his services in their cause, and by procuring and fitting out the vessel which bore the youthful patriot to the shores of America, hastened an event so interesting in the history of our revolution. On his return to France he resumed his rank in the French army, and subsequently served in the regiment of Port au-Prince, until the dispersion of the French troops in the Island of St. Domingo, when his devotion to liberal principles led him to seek an asylum in this country. Here, by his urbanity and the uprightness of his character, he secured the esteem and confidence of all who knew him, and by his kind and gentle disposition acquired the lasting affection of all who stood in the more intimate relation of kindred and friends.—[Nat. Intel.]

Suddenly, at Mobile, on the 26th June, Henry A. Ellis, a native of this city, and son of John F. Ellis, Esq. aged 32 years. His death was occasioned by a fall from his horse

At Jamestown, on the 26th June, the Rev. Isaac Eddy, aged 59 years.

In Hartford, Hezekiah Skinner, of the house of Webster & Skinners, of Albany.

At Natchez, Charles Wooster, late publisher of the Mississippi Journal: Richard Dowell, of Philadelphia.

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads

No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.

J 15 tf

RAILWAY IRON.

☞ Ninety-five tons	of	1	inch by	½	inch,
200	do.	1¼	do.	½	do.
40	do.	1½	do.	⅜	do.
800	do.	2	do.	½	do.
800	do.	2¼	do.	½	do.

soon expected.

Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them.

a3 4meowr

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

NORTH WESTERN RAILROAD

NOTICE.—Books for subscriptions to the additional Stock of "The Elizabeth-Town and Somerville Railroad Company," will be opened at William Craig's Inn, in Belvidere, on Monday the 29th day of July instant; at Israel Smith's, in Clinton, on the 30th; at Drake's Hotel, in Newark, on the 31st; and at the Exchange, in the city of New York, on the 1st, 2d, and 3d days of August next, between 11 A. M. and 3 o'clock P. M.—Additional stock required $500,000, in shares of $50 each—$5 on each share to be paid at the time of subscribing.—Dated July 12, 1833.

GARRET D. WALL,
THOMAS SALTER,
OLIVER W. OGDEN,
NATHANIEL SAXTON
JOHN W. BRAY,
JOHN KINNEY, Jun.

Books will also be opened at the same times and places, for subscriptions to the stock of "The Susquehanna and Delaware Railroad Company." Capital required $1,000,000. Shares $50 each—$5 on each share to be paid at the time of subscribing.—Dated July 10, 1833.

HENRY W. DRINKER,
DANIEL STROUD,
WILLIAM HENRY,
JOHN COOLBAUGH,
A. E. BROWN,
STOGDEL STOKES,
DAVID SCOTT,
JAMES M. PORTER.

Books will likewise be opened at the same times and places, for subscriptions to the stock of "The Leggets-Gap Railroad Company." Capital required $500,000. Shares $50 each—$5 to be paid at the time of subscribing.—Dated July 10, 1833.

HENRY W. DRINKER & others, Commis'rs.

The above roads, the stock of which is now offered to the public in connexion with the New Jersey Railroad, form one continuous line of railroad communication from Jersey City, opposite New York, through the Lackawana Coal Region, to the Northeast branch of the Susquehanna, below the great bend, and the North Branch of the Susquehanna at Pittstown, at the mouth of the Lackawana creek, and head of the Pennsylvania Canal navigation.

☞ Letters addressed to the Commissioners, containing the money or checks, will be received as subscriptions. The Stock will be distributed, &c. immediately before the Commissioners leave the City of New York.

j31

NEW YORK AND ERIE RAILROAD COMPANY.

ONE Million of Dollars of the Capital Stock of this Company having been subscribed, in conformity with the charter, the stockholders are hereby notified, that an election for the choice of seventeen Directors of the said Company, will be held at the Merchants' Exchange, on Friday, the 9th day of August next, under the inspection of the Commissioners, as directed in the charter. The Poll will open from 10 to 12 o'clock, A. M.

By order of the Commissioners.

New York, 19th July, 1833. j31 4t

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

☞ **GRACIE, PRIME & CO.** offer for sale, at 22 Broad street—

2 cases Gum Arabic
20 do. Danish Smalts, EFFF
10 do. Saxon do. do
100 bags Saltpetre
} Reduced Duty
2 do Gall nuts; 20 tons Old Lead
100 do. Trieste Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotle Rotie
10 do. Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
30 do. Molieres Almonds
143 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
15 do. 5-8 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
4 do. White Quiltings
10 do. Borrie's Patent Thread, No. 22 and 25
10 do Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
26 bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35, 24½x36, 24x34½, 26x36, 26x37, 29x41, 27x38½, 24x38, 24x29, 24x28, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.

5 cases each 1600 Sheets Colored Paper						
2	do	do	do	do	do	superfine
2	do	do	do fig.	do	do	
3	do	do	do plain Gold	do		
2	do	do	do plain Silver	do		
2	do	do	do	Silver	do with red figures	
2	do	do	do	Gold	do	do
2	do	do	do	Red	do	Gold do
2	do	do	do	White	do	Silver do.

A20

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

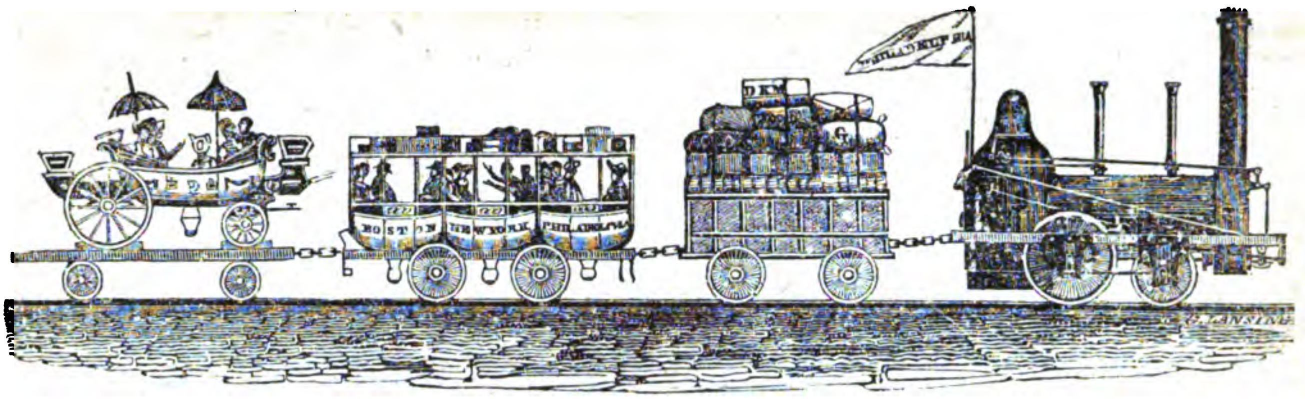
E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad



AMERICAN RAILROAD JOURNAL,

AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, AUGUST 10, 1833. [VOLUME II.—No. 32.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, AUGUST 10, 1833.

Elizabethtown and Somerville, and Delaware and Susquehanna Railroad.—The books for subscription to the stock of these roads were opened last week, and we are gratified to learn that the stock was taken. This shows that our neighbors of New-Jersey and the northern part of Pennsylvania are awake to their true interest. They are resolved to open the easiest and best mode of communication from the interior of those States—which abounds in mines of far greater value to this community than those of Carolina—with this city, and also with the interior of the State of New-York, at or near the Great Bend of the Susquehanna.

We were furnished with documents to enable us to go minutely into the subject, to show the feasibility, and the *great utility* of this proposed Railroad; but by accident a part of them have been mislaid, and therefore we are prevented from devoting that space to it, in this number, which we had set apart. We hope, however, to be able in our next to spread before our readers such facts as will aid those who desire to investigate the matter, in coming to correct conclusions. We will now only refer to the route of the different roads which, when completed, will form a continuous road from Jersey City, opposite New-York, through New-Jersey and Pennsylvania, to the New-York line, near the Great Bend.

The route through New-Jersey is from Jersey City, through Newark, Elizabethtown, and Somerville, to Belvidere, at which place it will probably cross the Delaware, and pass up on the west side to the Water Gap; from thence it bears westward through Stroudsburgh to, or *near* Pittston, on the Susquehanna, passing through the Lackawanna Coal Region. The distance from New-York to the Susquehanna, as the route has been examined, is 146 miles. From the Delaware and Susquehanna Railroad, where it passes through the Lackawanna Coal formation to Carbondale, 12 miles, and from Carbondale to the Great Bend of the Susquehanna, 47½ miles; making the entire distance from Hoboken to the Great Bend, 192½ miles.

By this route a large proportion of the business which now goes to Baltimore and Philadelphia would be diverted to New-York, in addition to the great benefit to be derived from a more direct, and of course less expensive, route for the coal trade.

[*From the Albany Argus.*]

New York and Ohio Canals.—We are authorized to state that Judge Tappan and Mr. Kelly, a committee of the Canal Commissioners of Ohio, had a meeting with a committee of the Canal Board of this State, at the canal room in this city, on the 30th July and that it was agreed by them to recommend to their respective Boards a reduction of 25 per cent, on the toll on merchandize transported on the canals of the two States. Should the recommendation be adopted, the reduction would take effect after the expiration of the present year. The great advantage of such a measure would be, it is supposed, to open to an extensive, populous, and wealthy region of country west and south of the southern extremity of the Ohio canal, a new and cheaper channel of communication with the sea-board—a region which now receives its supplies of merchandise, and transmits its agricultural productions, by routes less convenient and certain. Independently of the benefit which will be derived from the change by the district of country referred to, there is every reason to believe that the increased amount of transportation will keep up the aggregate amount of receipts on account of tolls; for notwithstanding the very considerable reductions made by our Canal Board during the last winter, it is now probable that the amount of tolls will exceed the sum received last year; and this can only be produced by a vast increase in the quantity of articles transported. Even should the receipts be diminished in a slight degree, for the first year, by the proposed reduction, the public will still be a gainer by having a larger portion of its capital and industry put into more active operation; and to no part of the State will it be of more importance, than to the city of New York, which will become the market for the new district thus opened to it.—But it is hardly to be apprehended that a reduction of 25 per cent. on a single item of transportation will produce any falling off in the aggregate amount of tolls—certainly none to be put in competition with the great public benefits which are likely to result from it.

On Wood Rails and Cast Iron Plates. By H. R. D. To the Editor of the American Railroad Journal.

Sir,—Having recently noticed in your valuable Journal a highly interesting discussion on the ultimate wear and strength of wrought and cast iron bars, when adapted to railroad purposes on wood as well as of stone, I now beg ave, through the medium of your journal, to offer a few remarks for the amusement of your readers, if not for their information, on the subject of wood rails and cast iron plates. In discussing the question in point, care should be taken to fix a data whereby the man of experience is enabled to direct just and conclusively. How it is that the wood rail lasts no longer than from five to six years, at present, I am unprepared to answer, unless from the inferiority of the same before laid down. One thing is well known, and that by many in this city, that pitch pine has been used for cisterns, which are alternately wet and dry, for the space of from twenty to thirty, and fifty years, when from various causes they have been taken up, and to the surprize of many were as sound as when put down. This was pitch pine, without any sap whatever, and this, too, what I would propose and prefer to stone in all cases where it could be obtained. Its cost is much less, more readily transported, less for labor on the same, and greatly facilitates the building of the road. In wet and spongy places it is highly preferable, as it would need regulating no oftener than half the expense to adjust it. This, covered with cast iron plates three inches wide and three-quarters thick, if practicable, in all cases to cast them in chills, say twelve feet long, so much the better, as the iron is so much stronger than when cast in an ordinary sand mould. I think, speaking from memory, that iron cast in a chill is as twenty-seven to thirteen—nearly a half stronger. This was the case in a number of experiments made in this city, in the presence of several respectable practical men, myself being witness to the same. The experiment was tried with rollers cast in a chill, and those cast in the ordinary manner. The result was, to the best of my recollection, as is stated above. However, if it is of any consequence, I can state the exact comparative strength between the same, there shown, much might be said for the wood rail, and cast plate. But the public in most cases have set their faces against it, and no man dare advocate the same unless at a risk of personal reputation. But the day is not far distant, in my opinion, at least, when wood rails and cast bars will be most generally used. Yours, most respectfully,

H. R. D.

Mercator on Mr. Sullivan's Plan for protecting Timber for Railroads. To the Editor of the American Railroad Journal.

Sir.—The writer hereof made some remarks in the 28th number of your Journal on Mr. Sullivan's proposed method for protecting timber from decay, which has caused a reply from Mr. S. in your 29th number, which reply being not satisfactory, I propose exceptions to it.

In my former communication I adverted to the fact, that the Arcade, lately taken down in this city, stood but *seven years*; that the *ends* of the timbers, in damp situations, incased with lime and stone, were decayed, and found to be but *dust*, in consistency, that would blow away with the wind; and, when timber is brought to *this* consistency in seven years, we may reasonably suppose that the wood must have been divested of its common strength in a comparatively short portion of that seven years. Mr Sullivan, in reply to this fact, states that "the explanation of the decay of the sleepers of the Arcade, in seven instead of forty years, is, that they were not only in an unventilated place, but in contact with *green mortar* of common lime."

If Mr. Sullivan will make experiments with common lime, hydraulic lime, or Roman cement, he will find that each and all of them, on one and the same principle, if placed in *damp situations*, will *continue* to be, in that sense of the expression, "green mortar," or "green cement," and there was no deficiency of ventilation in the interior of the Arcade.

I stated, at the commencement, that Mr. Sullivan's reply was not satisfactory; and I am sorry to find in any writer who exposes his writing in a public journal, a disposition to coin expressions, *attribute* them to *others*, and then to allude to them as "absurd:" it is unfair—if done intentionally. The "coined" expression of Mr. Sullivan may be discovered in his following paragraph, which I quote, wherein he stated that "He (Mercator) says that Roman cement and *pitch* will absorb water by capillary attraction; this is *rather absurd, and actually contrary to experience.*" Now, I deny any such expression: *I well know* that a coating of pitch is impervious to water. The *true words made use of in my communication are as follows:* "*Wood* cannot be kept dry in a wet or damp situation by the application of cement of common lime, *water lime*, or *Roman cement:* all three of them are conductors of water by *capillary attraction.*"

I commented upon the article of "pitch" in a distinct sentence, as follows: "As to pitch, if placed in a damp situation below the surface, it is of but short, a few months, duration. This may be observed upon a vessel's bottom, used either in fresh water or salt." Thus I clearly show the error of Mr. Sullivan's remarks on that subject.

With allusion to *cement*, Mr. Sullivan states as follows: "If it were, as 'Mercator' suggests, rolled up in a ball and placed in a plate of water, it is *probable* it would, *while green, absorb among its particles* some water. In building walls of locks, the water is not let in till the mortar has *had time to set*. Why, then, should it not set among fragments around a post?" In answer to this query, it may be stated, that it *will set* among fragments around a post; and if *good*, will *quickly* set. In making experiments I have known it to set in a single hour: so that it remains "green," as Mr. S. seems to suppose, but a short time. But the *fact* of its setting does not change another fact, that in its *nature* it is a *conductor* of water by *capillary attraction* after being so set.

I have in my possession a great number of *balls* of the most approved hydraulic lime and of Roman cement, which were formed in the year 1827, for the purpose of experiments; and since reading Mr. Sullivan's communication, I have placed a number of those balls, (*lower surface only*,) in contact with water, with a view to determine whether age produced any change in their capillary attractive nature; and the result was, that the *water* could be distinctly seen on the outer surface to *ascend*, so that in a few minutes the water became absorbed in the interstices of the balls, and in quantity equal to about two-fifths the bulk of the balls. I will with pleasure send some of those cement balls to your office, at request, if any one wishes to witness the effect. The balls are nearly of the consistency of hard stone. I think, therefore, it is reasonable to suppose that any substance placed in contact with a post, which would absorb and retain in contact for an uncertain time a quantum of water, probably to be imparted through the medium of the post, would continue the post in a *damp state* longer than if not covered by such substance, and thereby hasten its decay.

Even if it were possible to apply a lasting substance upon timber, rendering it *entirely impervious* to water and air, there is no certainty that the timber would be preserved by it. The least dampness remaining within the coating would cause dry-rot. I am informed that as a precaution in building a favorite ship, owned or built some years since in Baltimore, her timbers were made impervious to water or air by a coating of *varnish:* the result was, that after about six years the owners were surprised to observe her timbers generally so reduced to a dusty substance by dry-rot, in the interior part of them, as to cause the ship to be condemned as not worth repair. These things may be well understood by the study of the unerring principles in nature. Mercator.

New-York Guard Rail—U. A. Boyden in reply to R. Bulkley. [For the American Railroad Journal.]

Lowell, July 23, 1833.

Mr. Editor,—I presume your readers have had arguments enough offered, to convince them as to the utility of Mr. Bulkley's Guard Rail, and perhaps more quibbles than those who read merely for information can desire. It is chiefly to correct some imputations, that I make any reply to Mr. Bulkley. Though he has given many words in reply to me, he has advanced no fact against my assertions, nor has he given any potent argument in support of his own. My design in writing is rather to impart useful information than to cavil: I therefore shall make but a short reply to his quibblings.

Mr. Bulkley seems not much pleased with logical deductions from known data. We frequently hear it asserted by people, whose theories are all vague notions, that what is here in theory is proved erroneous by practice, and that theory, if followed, would lead astray—therefore it is a false and dangerous guide. When people thus proscribe theory, they merely give information of their being incapable of abstract reasoning.

Mr. Bulkley in endeavoring to make it appear that my statements are at variance with Mr. Sullivan's, quotes the following passage from my writings, "hence the wrought iron rail may be nearly or quite torn asunder without any extraneous force being applied to the rail." After which he quotes the following words from Mr. Sullivan, "loose in the bore," meaning the malleable iron rail; and then adds "I therefore quote enough of their own words to show that they are not only inconsistent with each other," &c.

If Mr. Bulkley can conceive of a malleable iron bar's being within a hole in a cast iron bar, the hole being larger than the malleable iron bar, and at the same time the malleable iron bar's being strained longitudinally, he will be able to perceive that Mr. Sullivan's and my statements on this subject *can* both be true. Further, if he can conceive of the malleable iron bar's being longer than the cast, and its ends larger than the calibre of the cast bar, and can conceive of the malleable bar's shrinking, he will then comprehend *how* it could be strained longitudinally, while the main body of it is not large enough to fill the calibre. When I first wrote on this subject, I stated that the shrinking of malleable iron by diminution of temperature, was more than that of cast iron, and that if the ends of the malleable iron bar were so constructed that it cannot slip in the cast iron, the bar may be strained, &c. I did not say whether it was an easy matter to make the malleable bar so that it could not slip in the cast iron.

Mr. Bulkley speaks continually, in his writings, of his rails being approved by eminent engineers who have "examined the rail in full size," whose names he does not give. Now I would inform Mr. Bulkley, (I do not suppose any other person ignorant of the fact,) that people do not give much credit to such pretexts, made by a person under such circumstances.

In my first communication on this subject, I quoted a passage from Mr. Wood's Treatise, which passage was not originally written by Mr. Wood, but he approved the sentiments it contained; I therefore quoted it as containing his sentiments. The reasons of my preferring this passage, I gave in my last communication. This quotation was taken by Mr. Wood, from a report of Mr. Stephenson, chief engineer of the Liverpool and Manchester Railroad. But Mr. Bulkley, in his first reply to me, in attempting to make it appear that I had prevaricated or got something wrong, said that if, I would refer to Wood's Treatise, I should find that "the remarks were made by Mr. *G. Stevenson.*" There being an engineer by the name of Stevenson, and two by the name of Stephenson, employed on railroads in England—though he failed in his attempt to correct me—I am none the less grateful to him.

Mr. Bulkley, in his last reply to me, denies having accused me of inconsistency in my writings. I know not whether he intended to accuse me of inconsistency, but it was clearly expressed. His accusation is in the following words: "In the course of my remarks, I shall show, that U. A. B. if sincere in his statements is not only actuated by erroneous impressions, but that his statements manifest a *want of consistency* in allusion to the subject, and a want of consistency compared with a previous statement on the same side of the subject made by Mr. S." He admitted that the latter part of this quotation implied that some of my statements are at variance with Mr. Sullivan's, which he failed to substantiate; but he says that no part of it implies that my statements are inconsistent with each other. He seems to imply that he meant that my statements were in opposition to experience; but he has given nothing like an interpretation of. Every master of the English language knows that the word, *consistency*, as applied to writings, signifies that the parts agree or stand together, or that it is not self-contradictory; it never implies that the writing is either true or false, or that it either agrees or disagrees with any thing not stated in the writing.

Mr. Bulkley speaks continually in his communications of "examining the rail in full size," as though he thought that no person could understand the subject without doing it. The principles on which it is constructed, and its properties, can be readily communicated by writing by people versed in such matters. We can imagine a piece of iron of any shape, and we know that rails may be made of any desirable shape. Looking at rails would merely inform us whether the workmanship of the rails we saw was good. Their strength or liability to breaking can be determined only by experiment, or by calculation from the known properties of the material.

Mr. Bulkley implies that I must be ignorant of the subject because I have not seen his *specification*—frequently mentioning the Guard Rail as having been patented by himself. He says he has, "in proper place in my *specification*, stated wherein it [the Guard Rail] differs from all other rails." In Vol. 2, No. 14, of the Railroad Journal, he says, "The New-York Patent Guard Rail, for which the patent right has been received in the United States and in Europe." Yet, previous to the current month, no letters patent for New-York Patent Guard Rail, or for a rail under any other name, had been issued to him from the Patent Office of the United States. In proof of which I have the authority of the superintendant of that office.

It seems by Mr. Bulkley's bestowing his slander profusely on me, that he is a little out of humor. This I anticipated. An inventor, who has spent much time and money in, as he thinks, perfecting his important invention, cannot be convinced that it is a futile and worthless contrivance without extreme vexation. He, like a person who has had an ulcer cured by painful measures, will often feel ill-will towards his benefactor.

In my second communication on this subject in several places, I put a noun, the word *iron*, in the possessive case, before the present participle; in printing, the apostrophe and s were improperly omitted. URIAH A. BOYDEN.

Philadelphia and Baltimore Railroad, by the way of Oxford—extracted from the Report of Edgar Thompson on a Survey of the Oxford Railroad. [From the Pennsylvania Inquirer.]

PHILADELPHIA, May 31, 1831.

GENTLEMEN,—In compliance with your request of the 20th ultimo, "that I would ascertain the practicability of constructing a railroad between the Pennsylvania railway in the great valley and the Susquehanna river, in the vicinity of Port Deposit, I have now the honor to submit for your information, the following report on my examination, accompanied by a plan and profile of the route, explanatory of the same.

Before proceeding to the location of a railway it is necessary to ascertain the nature and state of the trade to be accommodated, as on the result of this inquiry considerable dependence should be placed in selecting the preferable route.

The principal object obtained by the completion of the road will be a medium of transportation between Philadelphia and Baltimore, that shall be uninterrupted at all seasons of the yea.r The conveyance of *passengers, light parcels*, and the *mail*, will, therefore, be a chief source from which the Company are to derive their revenue, and, in all probability, the amount of this trade will be equal in opposite directions.

A second object of the road, and which is thought by some, to be of scarce less importance to the profit of the undertaking than the first mentioned, is the conveyance of lime and limestone, articles indispensable to the agriculturists of the districts through which the road will pass. As the route commences in, and immediately leaves the limestone formation, this trade will be carried wholly in the direction towards the Susquehanna river.

Several other sources might be enumerated from whence the revenue of the company will be materially augmented; such as the conveyance of agricultural products, and the carriage for the numerous mills, forges and factories in the vicinity of the line. But the two leading objects first above referred to should alone influence the direction and cost of the road.

Having now given a general view of the nature of the traffic anticipated, the principles that should govern the selection of the route, so as to ensure the accomplishment of those objects by the most safe and economical means of conveyance, comes next to be considered. These may be summarily stated to consist in disposing the inclination (and horizontal curvature) of the road, so that the cost of construction may be the least possible, compared with that of transportation.

A primary object, therefore, being celerity and safety of transit, horizontal curvature should be avoided as far as practicable, or its radii increased to as great an extent as is consistent with a due regard to economy.

The preponderance of trade, however, will be in the direction towards the Susquehanna river. Did the face of the country permit, there could be no doubt of the superiority of locating the road with an uniform slope, such that the motive power used to transport the relative amounts to be conveyed in each direction should be a minimum; but as this can seldom be attained without an increased length of road, or encountering heavy excavations and embankments, the most that can be anticipated is an average incline of moderate deviations from uniformity.

"This, with little exception, is obtained in the present instance in an eminent degree.

From this slight reference to the character of the trade, and the principles that should govern the location of the road, I will now proceed to give a general description of the country intermediate to the Pennsylvania railway and Port Deposit, which will serve to show that the project is not only entirely practicable, but its execution can be effected for a sum so limited, that a profit on the investments may be fairly anticipated at least proportionate to the cost of construction.

GENERAL DIRECTION OF THE LINE.—It will be seen by a geographical view of the district under consideration, that the waters of the Susquehanna river are parted from those falling into the Delaware river and the east side of Chesapeake bay, by a ridge which traverses its whole extent, almost in a direct line from the Pennsylvania railway to near Port Deposit.

This prominent feature of the country readily suggested the general direction of the route most advantageous for the proposed road.

Its course, diverging from the Pennsylvania railway, where it crosses this dividing ground, 45½ miles from Philadelphia, was traced along its summit, passing through Cochranville, Eden town, Russellville, Haysville and Oxford, and thence intersects the Susquehanna about half a mile above Port Deposit.

The character of the country so evidently marks out the general line of the road, that examination for a different route was thought wholly unnecessary. The direction of the line traced, however, may be materially improved in its detail, when a more minute survey shall have been made.

Following the summit of the ridge, few difficulties will be encountered in the construction of the road. The south valley hill, the most important impediment, crosses the trace of the route near its beginning, stretching east and west, and is only passed by a considerable excavation through the narrowest part of the ridge. The line rising at an inclination of 44 feet per mile.

Near the state line an embankment of 22 feet in height, at what are called the Barrens, and a short excavation, 30 feet in depth, through the ridge dividing the waters of Octorara creek and Rock run, beyond the Battle-swamp Tavern, constitute the only remaining difficulties worthy of mention. When it is considered that these occur on a line 31¼ miles in length, whose remarkable feature is *that not a single bridge or culvert* is necessary, as no water-courses, save one or two small spring runs, are crossed in the whole distance, (and those in Maryland,) the location will be thought an unusually favorable one.

The line alternately ascends and descends, conforming, as near as the principles of the location will permit, to the natural face of the ground, and has been divided into the following graduations:

TABLE OF GRADIENTS.

Ascending,—	2m.	30ch.	at 44 ft.	per	mile
	1	00	at 30	do.	do.
	2	70	level		
	4	32	at 14	do.	do.
Descending,—	1m.	20ch.	at 44 ft.	per	mile.
	6	65	at 6½	do.	do.
	5	06	at 30	do.	do.
	1	60	at 26½	do.	do.
	4	02	at 14½	do.	do.

Total distance, ascend, 7¾ miles. Level, 2⅞ miles. Descend, 19 miles.

It will be perceived that with the exception of the rise at the South Valley hill, the inclination on no part of the line exceeds 30 feet per mile, and the places are few, and the distances short, where even the latter grade is used. On two-thirds of the whole distance the inclination is less than 15 feet per mile, and in accordance with the principle stated in a previous paragraph, is traced chiefly descending.

The road, therefore, from its moderate graduations and freedom from sharp curvature, the radii of which being in no place less than 1,000 feet, is well adapted to the advantageous use of locomotive power.

The descent at the Susquehanna river is effected by a plane falling one in 23. As water can be obtained for the moving power on this plane, the cost of transportation on it may be considered no greater than on other portions of the line, and its moderate slope will free it from all risk in descending it.

My opinion of the facility or difficulty of grading the road bed will be best seen by consulting the following estimate of its probable cost.

Summary estimate of forming the bed of the road for a double railway, 25 feet in width:

Section—			
No 1. From Penn. rail. to Futhy's,	3m.	50ch.	$33,400
2. From Futhy's to Cochranville,	2	30	3,060
3. Cochranville to Fog's Manor M. H. road	1	60	1,905
4. Fog's Manor M. H. road to Russelville,	2	34	1,752
5. Russelville to Haysville,	1	65	3,250
6. Haysville to Oxford	2	60	3,896
7. Oxford to Port Deposit road,	2	00	2,648
8. Port Deposit road to the Barrens,	1	75	4,655
9. The Barrens to Md. State line,	1	40	8,834
From the Penn. rail. to the Md. line, which is to be made by the Ox. Rail. Co.	20	14	63,400
10. From the state line to Conowingo road,	1	40	1,180
11. From the Conowingo road to M'Cready's	1	60	1,360
12. From M'Cready's to M'Graw's M. H. road	2	10	2,400
13. From M'Graw's M. H. road to Battle-Swamp,	2	40	6,510
14. From Battle-Swamp Tavern to inclined plane,	1	46	12,900
15. To the river Susquehanna,	1	50	9,850
Total cost of forming the bed of the road,	31	20	97,600
Cost of that portion in Md.	11	6	34,200

A double railway may be constructed of wooden string-pieces, and wooden cross sleep-

ers, &c. &c. laid complete, at $8,000 per mile, which, for 31¼ miles, is	$250,000
Road bed as per estimate	97,600
Machinery, &c. at plane	11,000
	358,600
Add for superintendance and unforeseen contingencies	35,800
	394,400

It will be seen from the above estimate that the average cost per mile of the whole line is $12,030. Of that portion in the State of Pennsylvannia called the "Oxford Railroad," 20¼ miles, $12,655 per mile.

The coet of forming the bed of the railroad for a double way, and laying a single road (with suitable turn outs) will not exceed $9,000 per mile. This plan it would be adviseable to persue in the first instance. Under a well regulated system of transportation, it will be calculated to accommodate all the trade on the the road, and a second track may ae added as this increases.

The superstructure is estimated to be of wood, plated with 5-8 inch bar iron, which plan is advised as being best adapted to this country.

In conclusion I will remark, that in consequence of the peculiar formation of the country, and cheapness of construction of your road, together with its large amount of local trade, so becided superiority is given to the route tracec, that no "opposition line" may be anticipated. The distance from Philadelphia to Port Deposite is 76¾ miles.

All of which is respectfully submitted by

Your obedient servant,

Jn. Edgar Thomson,

Civil Engineer.

In connection with the foregoing, Mr. T. made a reconnoisance of the ground between Baltimore and Port Deposite, which resulted very favorably, making the distance 41¼ miles, or 118 miles from city to city, by railway; but as this part of the line has since been taken up by the Baltimoreans, and is uow being prosecuted, (the stock having been subscribed, see Mr. Freeman's letter,) it is thought unnecessary embody his remarks on that part of the subject.

It may be well to mention that the books for the section from Port Deposite to this line,, 11 mileswill be opened in the course of a short time. The whole distance for which the stock has not yet been subscribed, is only 31¼ miles.

The followiny letter has been received:

By request I have examined Mr. Thomson's redort and plans of the Oxford Railroad; I concur with his remaks on the subject, and believe the estimate for forming the road to be liberal in all its items.

From the description given of the line by Mr. Thomson in his report, I should consider the route both practicabls and highly favorable for a railroad. (Signed.) John Wilson,

Chief Eng. of the Penn. Railroad.

Ithaca and Owego Railroad.—We are gratified to be able to state that the railroad company are making the most energetic and commendable exertions for the early completion of this work. We understand that the rails are laid and laying on 8 or 10 sections of the road—that the iron for the rails and spikes has all been contracted for, and has arrived at Albany—150 tons of which has been received on the road at the Inlet, in this village—and that the directors and engineer have determined that about one half of the route, (to where it intersects the turnpike to Owego,) will be completed for the winter business, and the whole route for the spring business.

In connexion with this, we rejoice to learn that the prospect is favorable for an early extension of our railroad communication to the city of New-York, through the New-York and Erie railroad. The amount of stock required to be subscribed for the commencement of this important work, and which is to be applied to its construction from New-York to the Susquehannah river, being one million of dollars, has been recently taken up in New-York. This great work will of course connect with our railroad at Owego, and though it will doubtless be ultimately extended to Lake Erie, through Tioga, Steuben, Allegany, and Chatauque counties, still it will form a line of communication from Ithaca to New-York for some time before the western section can be constructed; and its connection with the north-western counties through the Ithaca and Owego railroad, wil always be an important branch, and be of incalculable advantage to the line of villages from Owego to Buffalo. While the cities and villages on the eastern section of the Erie canal are turning their attention to the construction of railroads parallel to that great work, perhaps the citizens of the cities and villages on the western division may be induced to turn their attention to a channel of communication with our great commercial emporium, much shorter and more expeditious. Such a channel is offered by the works now in progress and preparation, and we trust they do not lack the energy and public spirit necessary to avail themselves of such advantages.—[Ithaca Chronicle.]

Railroad in Georgia.—We are rejoiced to find, says the Savannah Georgian of July 27, that an effort is about to be made in our state to establish a railroad. Let one be but completed, and the evident advantages arising therefrom will open the eyes of our people to their true interests, rebuke the sloth which oppresses them, and awaken a spirit of state pride, which will impel her onward to the stand to which her resources, if aided by the intelligence of her sons, will exalt her. We take the following remarks and netice from the Athens Banner of the 22d instant:

"*Railroad.*—The interest that appears to be manifested by our citizens in the project of a railroad between this place and Augusta, adds confirmation to our opinions on the subject, which were alluded to two weeks since. Confidently believing the scheme practicable, and of the greatest utility, we hope to see it looked upon as it deserves. To this end we would urge the call of meetings of the citizens in every town and village interested in its success, that the subject may be fully discussed, and fairly brought before the people. If but a few enterprising individuals at first engage in it—let a company at once be formed—an act of incorporation obtained at the next session of the legislature—subscription books opened—and by that time money will not be wanting to complete the object. The entire stock, we believe, would be taken up immediately. We hope some of our influential citizens will call a meeting on the subject, and that without delay, that Athens may set the example in this important work.

"Since the above was written, we have received the following notice. The call, we hope, will be promptly responded to:

"*Railroad Notice.*—The citizens of Athens particularly, and of Clark county generally, who may feel interested in the undertaking, are invited punctually to attend at the Chapel on Wednesday next, at 5 o'clock, P. M., to enter into such arrangements as may be determined upon, to provide for the commencement of a railroad between Athens and Augusta. The importance of the subject, it is hoped, will insure a general attendance."

The Western Trade.—It is stated in the Cleveland Herald, that produce to the value of one and a half millions of dollars, was exported last year from that port, and that probably two millions of dollars worth would be exported the present year. Cleveland, as most of our readers know, is situated on the shore of Lake Erie, at the mouth of the Ohio Canal, and the far greater part of this produce has been received via the canal. Comparatively speaking it is quite recently also since this canal was opened; and if such be the results already—before commerce has assumed any particular channel, and before the district of country from which this amount of produce was drawn, is more than one-third peopled—what will they be, a few years hence?

The trade of the state of Ohio and adjacent portions of the fruitful West, constitutes a prize well worthy of competition. New York was first in the field, with her Grand Canal;—Pennsylvania then commenced her system of improvement by Canals: pushing them westward to the limits of her territory, and now contemplating a cross cut from her own canal to intersect that of Ohio. Then comes the magnificent undertaking of Maryland,—the Baltimore and Ohio Rail Road. In the contest for this mighty prize, Rail Roads must have a decided advantage over Canals.

Aware of this, at length, New York is about to put forth her strength in another effort. The trade of Ohio is the great object which she would secure by the newly projected rail-road, through her "southern tier of counties," from the city of New York to Lake Erie. The prize is worthy of the competition.—[Baltimore Patriot.]

We shall take pleasure in publishing further extracts from the journal of which the following is a commencement:

To the Editor of the American Railroad Journal:

Sir,—Having been frequently importuned by my friends to relate to them such scenes from backwood exploring expeditions as may have come within my observation, I send you a copy from a manuscript journal, as the most proper way through which for them to draw their amusement or instruction.

It is taken from parts of a continued story, and if worthy of a page in your Journal, you may insert it, and should I have time I will now and then send you some further extracts.

Arrival at the point of communication—parties mustered—force collected—instruments and tools unpacked. Down came the barouche with Charley's dun and the old bay before it, at a furious rate, from —— street; Charley didn't like the rattling over the pavement at all. What with this and two or three heavy lumber waggons, and the stowing away rods, flag poles, pike staffs, chains, levers, and instruments, constituting the efficient paraphernalia of a fully equipped exploring party—the hallooing of the men, swearing of the hostlers, and with now and then an order given in a lower key, the whole neighborhood of our hotel was in an uproar.

On the opposite side of the street, and on this side also, but at a respectable distance, were collected, here and there, groups of anxious, "stupid starers"; the windows of the surrounding habitations, and "*the house*," were occupied by its attentive and inquisitive inmates; and the novelty of such a sight in this *rather* out-of-the-way town, excused the fairer forms and fairer faces that were attracted to the balcony and piazza of the mansion. The old General's daughter condescended to wave her white 'kerchief to P. and W. as they left the town.

The moment a waggon arrived, each man was in the twinkling of an eye for "his seat"; thus again you might see some shrewd fellow that was fearful that, there not being sufficient room for *all*, and as he had not yet a seat, he *might* be among the unfortunate number who perhaps would have to "foot it," would shoulder in the most careful manner a long levelling rod, and approaching an assistant, inquire whether "the *rod* had not better go with this ere waggon?" Which, if answered in the affirmative, he would pick out some less fortunate one, who, perhaps, was at that very moment inwardly chuckling himself at his good luck; dislodge him, take his place, *because* "Mr. —— said this ere *rod* must go." It being an argument of that kind that always proved irrisistible, notwithstanding he ran the risk himself of being the next minute pulled out (if he did not follow up the argument of the *rod*) to make way for the chief's or an assistant's huge trunk, that being an article that took the precedence of every thing else except his own more important body.

So pulling, and pushing, and crowding, all matters were at last disposed of in a satisfactory manner.

The Engineer-in-Chief proceeded to the carriage, accompanied by one or two of the Directors and Mr. P., they entered it and drove off, followed by the whole cavalcade, under the direction of Mr. W., with the bright instruments glistening in the sun, and the elevated pike staffs ornamented with station flags bristling by the side of every man on the outside seats, who had thus regularly disposed themselves of their own accord, behaving in the most circumspect manner, and feeling elevated a *grade* above their former companions, who stopped along the street sides to gaze with admiration upon the passing novelty. * * * * *

Thus situated they moved on, S—— impressing the minds of the Directors and P—— with tolerable notions of his abilities, and encouraging them with the hopes of a speedy location, and W——, changing his position from between William and Wyme for a seat by himself, was giving up to thoughts that were carrying him far, far from what was passing around. He had left his parents, his family, his friends, society, all, far behind him, and was burying himself alone and friendless into the depths of the native forest.

"What," he mused, "will my leisure moments be employed in; in conversing with these semi-barbarians, who have not one idea in common with me? Tired from the fatigue of the day's duties, separated for miles from my brother assistants, weighed down with these constant 'sines, tangents, and chords,' where shall I fly for rest, for communion of mind? * * *

* * * they love, they hate, they think, but they do not love the same *way*, neither do they love the same *things* as I do; yet still it may be of as sincere a *kind*, perhaps more so. They have but one like, and that is love; but one hatred, and that is revenge; their simple and rude minds know no distinctive grades in either passion, and their less elevated thoughts are adapted to their less elevated condition; how supremely unhappy were it otherwise. Ask the backwoodsman what is happiness, or, rather ask him (and he will understand you better), what is the boundary of his wishes? He will tell you, a good rifle, a healthy strapping wife, and good crop of grain; or, perhaps, he will place first in the list a pint of real Monongahela! What shall I gain by this sacrifice—shall learn to know a hemlock from a pine? No, no, not this; but I will learn to rise, rise in my profession; I will—and a sudden cant of the waggon, from a wheel running over a stump, reminded him of his seat, as he motioned his whole body in turning off the main road on which they had been riding, that ran along the foot of the hill; and proceeding on down a lane, bordered with shrubbery that crossed the valley, the barouche halted opposite a neat and beautiful cottage, that had just emerged from the surrounding foliage.

The whole party dismounted and followed Mr. S —— within its enclosure. W——, the vanity of whose thoughts we have just seen, meeting with such a reception where he had expected a mean log house, and meaner inmates, felt so abashed at the gentility of its inhabitants and the taste with which it was furnished, that, ashamed of his vanity, he slunk away into a corner of its trellised alcove.

In a few moments Mr. ——, (one of the directors,) introduced the gentlemen of the party to Mr. —— and his family, who by their kindness and suavity of manners, backed by a well provided dinner, soon made every one perfectly at their ease; the afternoon being given up for making all necessary preparation for the commencement of the survey on the morrow.

The venerable Countess de Grey who died the other day at her house in St. James's square (and who is succeeded in the title by Lord Grantham, now Earl de Grey) left behind her some of the most splendid pictures, painted by Vandyke, now in this kingdom. They are all in their original and pure condition, never having been varnished. The Earl de Grey, who is residuary legatee, and will inherit the great wealth of his near relative, retains likewise these grand specimens of Vandyke's pencil; but some pictures of less value, and the extremely curious old furniture and china will be brought to the hammer.

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 23d to the 31st day of July, 1833, *inclusive.*

Date.	Hours	Thermometer.	Barometer.	Winds.	Strength of Wind.	Clouds from what direction.	Weather.	Remarks.
July 23	6 a. m.	73	30.14	NE	light		clear	
	10	78	30.16	NNE—NNW	..		..	
	2 p. m.	82	30.15	SW—SSE	..		..	Arithmetical mean of the thermometer for the month of July, 74.14.
	6	76	30.12	SSE	moderate		..	
	10	72	30.12	SSW	..		..	
" 24	6 a. m.	69	30.05	SW	..		..	
	10	80	30.00	..	.		..	
	2 p. m.	91	29.94	SW—NW	..	..	..	
	6	78	29.96	NNW	..	..	.. —cloudy at 4½	
	10	75	29.98	..	..		thunder showers—cl'dy	
" 25	6 a. m.	74	30.05	..	..	N	cloudy	Maximum height of the barometer in July, 30.25 in.—Minimum, 29.65 in.—Range, 0.60 in.
	10	75	30.08	NNE	fresh	..	..	
	2 p. m.	79	30.11	..	..	WNW	..	
	6	72	30.11	SSW	moderate	SSW	.. —light showers	
	10	71	30.15	..	fresh	..	fair	
" 26	6 a. m.	63	30.20	NNE	moderate	W	..	
	10	70	30.21	N	..	SW	..	
	2 p. m.	79	30.19	SSW	faint	S	..	The observations of winds for July result as follows: From the North-Eastern quarter, including N. 15. From the South-Eastern, including E. 16½. From the South-Western, 74. From the North-Western, 40½.
	6	73	30.15	SSE	light	..	..	
	10	69	30.13	..	..	..	..	
" 27	6 a. m.	66	30.12	SW	fresh	WSW	clear	
	10	74	30.00	..	moderate	..	fair	
	2 p. m.	84	29.95	..	..	..	..	
	6	80	29.81	..	fresh	NNW	..	
	10	78	29.81	..	..	..	..	
" 28	6 a. m.	75	29.82	WNW	..		clear	
	10	85	29.89	..	..	SSW WNW	fair	
	2 p. m.	83	29.95	..	strong	WNW	.. —wind at times violent	
	6	76	30.01	..	moderate	..	..	
	10	63	30.10	..	..	..	..	
" 29	6 a. m.	63	30.17	NNE	..		..	
	10	70	30.11	WNW—SW	..	..	..	
	2 p. m.	77	30.04	SW—S	..	..	..	The observations of the higher currents, as indicated by the highest observed clouds, result as follows: From the North-Eastern quarter, 5 From the South-Eastern, 2. From the South-Western, 65. From the North-Western, 54.
	6	75	29.97	S—SSE	fresh	W	.. —gale fr eastward	
	10	73	29.96	E	gale	SSE	.. —scuds fr sw	
" 30	6 a. m.	75	29.76	SW	strong	SW	.. — ..	
	10	80	29.70	..	fresh	..	.. —light showers	
	2 p. m.	84	29 65	WSW	..	NNW	rain	
	6	76	29.72	NNW	..	..	cloudy	
	10	70	29.80	..	moderate		..	
" 31	6 a. m.	62	29.92	..	light		clear	
	10	73	29.98	..	..	NW	fair	
	2 p. m.	81	29.98	W	..	..	..	
	6	75	29,98	..	..	..	..	
	10	70	29.98	..	..	..	..	

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of June, 1833—(*Latitude* 31.10 *N.*, *Longitude* 91.59 *W. nearly.*)

Date.	Thermometer.			Wind.	Weather, Remarks, &c.
1833.	Morn'g.	Noon.	Night.		
June 1	75	84	81	S—high	clear—light flying clouds all day
" 2	76	87	81	S—light	.. — .. .. ..
" 3	71	85	78	..	.. —yellow figs ripe, and very large
" 4	71	86	80	..	.. —rain in the evening
" 5	70	86	80	..	..
" 6	71	87	79	..	..
" 7	73	88	78	..	.. —evening light showers and calm
" 8	72	81	78	calm	cloudy all day
" 9	73	85	79	W	clear all day
" 10	73	86	80	N—light	cloudy morning—clear evening
" 11	71	86	78	calm	clear all day—finished mowing first crops of clover and saved the hay
" 12	73	88	78	..	clear morning—evening wind W and cloudy
" 13	73	87	82	W—light	.. — .. calm
" 14	72	84	82	calm	.. —cloudy and thunder at night
" 15	76	80	80	..	cloudy—severe rain and thunder from 8 a. m. to 1 p. m.—cloudy all night
" 16	75	87	82	S—high	clear—flying clouds—evening calm
" 17	75	88	82	..	.. ..
" 18	76	88	81	..	.. .. —River rising
" 19	77	89	83	S—light	.. —evening light showers—calm
" 20	74	84	79	calm	cloudy morning—rain and thunder—evening clear
" 21	73	87	79	..	clear
" 22	76	89	79	..	.. morning—evening rain, wind SW—river risen ½ inch, and at a stand
" 23	76	86	80	SW—high	.. in the evening—wind W, light—night wind NW, high—tomatoes ripe
" 24	70	79	69	N—high	.. all day—night calm—finished gathering our crops of Irish potatoes
" 25	64	80	75	calm	.. .. —Red River falling
" 26	66	85	78	SW	.. .. —United States Snag Boats, Capt. Shreeve, from the raft went
" 27	69	85	79	SW—light	.. .. [down, in all 4 steamboats
" 28	71	34	60	calm	cloudy all day { Red River has fallen this month two inches,
" 29	73	88	61	S	clear—light flying clouds { and is now 10 inches below extreme high
" 30	74	90	62	calm	.. .. { water of 1828.

WRITTEN NEWSPAPERS.—The desire of news from the capital, on the part of the wealthier country residents, and probably the false information and the impertinence of the news-writers, led to the common establishment of a very curious trade,—that of a news correspondent, who, for a subscription of three or four pounds per annum, wrote a letter of news every post day to his subscriber in the country. This profession probably existed in the reign of James I.; for in Ben Jonson's play, "The Staple of News," written in the first year of Charles I., we have a very curious and amusing description of an office of news manufactures:

> "This is the outer room, where my clerks sit,
> And keep their sides, the Register i' the midst;
> The Examiner, he sits private there within;
> And here I have my several rolls and files
> Of news by the alphabet, and all put up
> Under their heads."

The news thus communicated appears to have fallen into as much disrepute as the public news. In the advertisement announcing the first number of the "Evening Post," (Sept. 16th, 1709,) it is said, "There must be three or four pounds per annum paid by those gentlemen who are out of town, for written news, which is so far, generally, from having any probability of matter of fact in it, that it is frequently stuffed up with a *We hear*, &c.; or, *an eminent Jew merchant has received a letter*, &c.; being nothing more than downright fiction." The same advertisement, speaking of the published papers, says, "We read more of our own affairs in the Dutch papers than in any of our own." The trade of a news correspondent seems to have suggested a sort of union of written news and published news; for towards the end of the seventeenth century, we have *news letters* printed in type to imitate writing. The most famous of these was that commenced by Ichabod Dawks, in 1696, the first number of which was thus announced: "This letter will be done upon good writing paper, and blank space left, that any gentleman may write his own private business. It does undoubtedly exceed the best of the *written news*, contains double the quantity, is read with abundance more ease than pleasure, and will be useful to improve the younger sort in writing a curious hand."—[Companion to the Newspaper, England.]

Babbage on the Economy of Manufactures.

[Continued from page 485.]

Quicksilver cost £10 16 per cwt. Quicksilver worth £1, when manufactured into vermillion of average quality, became £1 81.

Metallic arsenic cost £1 4 per cwt. Arsenic worth £1, when manufactured into white oxide of arsenic, became £1 83—sulphate (orpiment), 4 26.

The price of cast iron was 8*s*. per cwt. Cast iron worth £1, when manufactured into household utensils, became £2 00—machinery, 4 00—ornamental, as buckles, &c. 45 00—bracelets, figures, buttons, &c. 147 00.

Bar iron cost £1 6 per cwt. Bar iron worth £1, when manufactured into agricultural instruments, became £3 57—musket barrels, 9 10—barrels of double-barrel guns, twisted and damasked, 238 08—blades of penknives, 657 14—blades of razors, cast steel, 53 57—blades of sabres, for cavalry, infantry, and artillery, &c. from 9 25 to 16 07—blades of table knives, 35 70—buckles of polished steel, used as jewellery, 896 66—clothiers' pins, 8 03—door-latches and bolts, from 4 85 to 8 50—common files, 2 55—flat files, cast steel, 20 44—horse-shoes, 2 55—iron, small slit, for nails, 1 10—metallic cloth, iron wire, No. 80, 96 71—needles of various sizes, from 17 33 to 70 85—reeds for weaving 3-4ths calico, 21 87—saws (frame) of steel, 5 12—saws for wood, 14 28—scissors, finest kind, 446 94—sword handles, polished steel, 972 82—cast steel, 4 28—steel cast in sheets, 6 25—cemented steel, 2 41—natural steel, 1 42—tinned iron, from 2 04 to 2 34—iron wire, from 2 14 to 10 17.

158. The following is stated by M. de Villefosse to be the price of bar iron at the forges of various countries, in January, 1825.

	Per ton.
France,	£26 10 0
Belgium and Germany,	16 14 0
Sweden and Russia, at Stockholm and St. Petersburg,	13 13 0
England, at Cardiff,	10 1 0
The price of the article in 1832, was	5 0 0

M. de Villefosse states that in France, bar iron, made as it usually is with charcoal, costs three times the price of the cast iron out of which it is made; whilst in England, where it is usually made with coke, the cost is only twice the price of cast iron.

ON THE DIVISION OF LABOR.

159. Perhaps the most important principle on which the economy of a manufacture depends, is the *division of labor* amongst the persons who perform the work. The first application of this principle must have been made in a very early stage of society, for it must soon have been apparent, that more comforts and conveniences could be acquired by one man restricting his occupation to the art of making bows, another to that of building houses, a third boats, and so on. This division of labor into trades was not, however, the result of an opinion that the general riches of the community would be increased by such an arrangement: but it must have arisen from the circumstance of each individual so employed discovering that he himself could thus make a greater profit of his labor than by pursuing more varied occupations. Society must have made considerable advances before this principle could have been carried into the workshop; for it is only in countries which have attained a high degree of civilization, and in articles in which there is a great competition amongst the producers, that the most perfect system of the division of labor is to be observed. The principles on which the advantages of this system depend have been much the subject of discussion amongst writers of political economy; but the relative importance of their influence does not appear, in all cases, to have been estimated with sufficient precision. It is my intention, in the first instance, to state shortly those principles, and then to point out what appears to me to have been omitted by those who have previously treated the subject.

160. First. *Of the time required for learning.* It will readily be admitted, that the portion of time occupied in the acquisition of any art will depend on the difficulty of its execution; and that the greater the number of distinct processes, the longer will be the time which the apprentice must employ in acquiring it. Five or seven years have been adopted, in a great many trades, as the time considered requisite for a lad to acquire a sufficient knowledge of his art, and to repay by his labor, during the latter portion of his time, the expense incurred by his master at its commencement. If, however, instead of learning all the different processes for making a needle, for instance, his attention be confined to one operation, a very small portion of his time will be consumed unprofitably at the commencement, and the whole of the rest of it will be beneficial to his master; and if there be any competition amongst the masters, the apprentice will be able to make better terms, and diminish the period of his servitude. Again: the facility of acquiring skill in a single process, and the early period of life at which it can be made a source of profit, will induce a greater number of parents to bring up their children to it; and from this circumstance, also, the number of workmen being increased, the wages will soon fall.

161. A certain quantity of material will be consumed unprofitably, or spoiled, by every person who learns an art; and, as he applies himself to each new process, he will waste a certain quantity of the raw material, or of the partly manufactured commodity. But whether one man commits this waste in acquiring successively each process, or many persons separately learn the several processes, the quantity of was tewill remain the same: in this view of thes ubject, therefore, the division of labor will neither increase nor diminish the price of the production.

162. Second. Another source of the advantage resulting from the division of labor is, that time is always lost from changing from one occupation to another. When the human hand, or the human head, has been for some time occupied in any kind of work, it cannot instantly change its employment with full effect. The muscles of the limbs employed have acquired a flexibility during their exertion—and those to be put in action, a stiffness during rest—which renders every change slow and unequal in the commencement. A similar result seems to take place in any change of mental exertion; the attention bestowed on the new subject is not so perfect at the first commencement as it becomes after some exercise. Long habit also produces in the muscles exercised a capacity for enduring fatigue to a much greater degree than they could support under other circumstances.

163. Another cause of the loss of time in changing from one operation to another, arises from the employment of different tools in the two processes. If these tools are simple in their nature, and the change is not frequently repeated, the loss of time is not considerable; but in many processes of the arts the tools are of great delicacy, requiring accurate adjustment whenever they are used. In many cases the time employed in adjusting, bears a large proportion to that employed in using the tool. The sliding-rest, the dividing and the drilling engine, are of this kind; and hence in manufactories of sufficient extent, it is found to be good economy to keep one machine constantly employed in one kind of work: one lathe, for example, having a screw motion to its sliding-rest along the whole length of its bed, is kept constantly making cylinders; another, having a motion for rendering uniform the velocity of the work at the point at which it passes the tool, is kept for facing surfaces; whilst a third is constantly employed in cutting wheels.

164. Third. *Skill acquired by frequent repetition of the same processes.* The constant repetition of the same process necessarily produces in the workman a degree of excellence and rapidity in his particular department, which is never possessed by one person who is obliged to execute many different processes. This rapidity is still farther increased, from the circumstance that most of the operations in factories, where the division of labor is carrid to a considerable extent, are paid for as piece work. It is difficult to estimate in numbers the effect of this cause upon production. In nail-making, Adam Smith has stated that it is almost three to one; for, he observes, that a smith accustomed to make nails, but whose whole business has not been that of a nailer, can make only from eight hundred to a thousand per day; whilst a lad, who had never exercised any other trade, can make upwards of two thousand three hundred a day.

165. Upon an occasion when a large issue of bank-notes was required, a clerk at the Bank of England signed his name, consisting of seven letters, including the initial of his Christian name, five thousand three hundred times during eleven working hours; and he also arranged the notes he had signed in parcels of fifty each. In different trades, the economy of production arising from this cause will necessarily be different. The case of nail-making is, perhaps, rather an extreme one. It must, however, be observed that, in one sense, this is not a permanent source of advantage; for, although it acts at the commencement of an es-

tablishment, yet every month adds to the skill of the workmen; and at the end of three or four years they will not be very far behind those who have practised only the particular branch of their art.

166. Fourth. *The division of labor suggests the contrivance of tools and machinery to execute its processes.* When each process, by which any article is produced, is the sole occupation of one individual, his whole attention being devoted to a very limited and simple operation, any improvement in the form of his tools, or in the mode of using them, is much more likely to occur to his mind than if it were distracted by a greater variety of circumstances. Such an improvement in the tool is generally the first step towards a machine. If a piece of metal is to be cut in a lathe, for example, there is one angle at which the cutting-tool must be held to insure the cleanest cut; and it is quite natural that the idea of fixing the tool at that angle should present itself to an intelligent workman. The necessity of moving the tool slowly, and in a direction parallel to itself, would suggest the use of a screw, and thus arises the sliding-rest. It was probably the idea of mounting a chisel in a frame, to prevent its cutting too deeply, which gave rise to the common carpenter's plane. In cases where a blow from a hammer is employed, experience teaches the proper force required. The transition from the hammer held in the hand to one mounted upon an axis, and lifted regularly to a certain height by some mechanical contrivance, requires perhaps a greater degree of invention. Yet it is not difficult to perceive, that, if the hammer always falls from the same height, its effect must be always the same.

167. When each process has been reduced to the use of some simple tool, the union of all these tools, actuated by one moving power, constitutes a machine. In contriving tools and simplifying processes, the operative workmen are, perhaps, most successful; but it requires far other habits to combine into one machine these scattered arts. A previous education as a workman in the peculiar trade is undoubtedly a valuable preliminary; but in order to make such combinations with any reasonable expectation of success, an extensive knowledge of machinery, and the power of making mechanical drawings, are essentially requisite. These accomplishments are now much more common than they were formerly; and their absence was, perhaps, one of the causes of the multitude of failures in the early history of many of our manufactures.

168. Such are the principles usually assigned as the causes of the advantages resulting from the division of labor. As in the view I have taken of the question, the most important and influential cause has been altogether unnoticed, I shall re-state those principles in the words of Adam Smith: "The great increase in the quantity of work, which, in consequence of the division of labor, the same number of people are capable of performing, is owing to three different circumstances: first, to the increase of dexterity in every particular workman; secondly, to the saving of time, which is commonly lost in passing from one species of work to another; and, lastly, to the invention of a great number of machines, which facilitate and abridge labor, and enable one man to do the work of many." Now, although all these are important causes, and each has its influence on the result, yet it appears to me, that any explanation of the cheapness of manufactured articles, as consequent upon the division of labor, would be incomplete if the following principle were omitted to be stated.

That the master manufacturer, by dividing the work to be executed into different processes, each requiring different degrees of skill and force, can purchase exactly that precise quantity of both which is necessary for each process; whereas, if the whole work were executed by one workman, that person must possess sufficient skill to perform the most difficult, and sufficient strength to execute the most laborious, of the operations into which the art is divided.*

169. As the clear apprehension of this principle, upon which so much of the economy arising from the division of labor depends, is of considerable importance, it may be desirable to illustrate it, by pointing out its precise and numerical application in some specific manufacture. The art of making needles is, perhaps, that which I should have selected as comprehending a very large number of processes remarkably different in their nature; but the less difficult art of pin-making has some claim to attention, from its having been used by Adam Smith, in his illustration of the subject; and I am confirmed in the choice, by the circumstance of our possessing a very accurate and minute description of that art, as practised in France above half a century ago.

170. *Pin-making.* In the manufacture of pins in England, the following processes are employed:

Wire-drawing. I. The brass wire used for making pins is purchased by the manufacturer in coils of about twenty-two inches in diameter, each weighing about thirty-six pounds. The coils are wound off into smaller ones of about six inches in diameter, and between one and two pounds' weight. The diameter of this wire is now reduced by drawing it repeatedly through holes in steel plates, until it becomes of the size required for the sort of pins intended to be made. During the process of drawing the wire through these holes it becomes hardened, and it is necessary to anneal it in order to prevent its breaking; and to enable it to be still farther reduced it is annealed two or three times, according to the diminution of diameter required. The coils are then soaked in sulphuric acid, largely diluted with water, in order to clean them, and are then beaten on stone for the purpose of removing any oxidated coating which may adhere to them. This process is usually performed by men, who draw and clean from thirty to thirty-six pounds of wire a day. They are paid at the rate of five farthings per pound, and generally earn about 3*s.* 6*d.* per day.

M. Perronet made some experiments on the extension the wire undergoes by this process at each hole: he took a piece of thick Swedish brass wire, and found its length to be before drawing, 3 feet 8 inches—after passing the first hole, 5 feet 7 inches—after passing the second hole, 7 feet 2 inches—and after passing the third hole, 7 feet 8 inches.

It was now annealed, and the length became after passing the fourth hole, 10 feet 8 inches—after passing the fifth hole, 13 feet 1 inch—after passing the sixth hole, 16 feet 8 inches—and finally, after passing through six other holes, 144 feet.

The holes through which the wire was drawn were not, in this experiment, of regular decreasing diameter; and it is extremely difficult to make such holes, and still more to preserve them in their original dimensions.

171. II. *Straightening Wire.* The coil of wire now passes into the hands of a woman, assisted by a boy or girl. A few nails, or iron pins, not quite in a line, are fixed into one end of a wooden table about twenty feet in length; the end of the wire is passed alternately between these nails, and is then pulled to the other end of the table. The object of this process is to straighten the wire, which had acquired a uniform curvature in the small coils into which it had been wound. The length thus straightened is cut off, and the remainder of the coil is drawn into similar lengths. About seven nails or pins are employed in straightening the wire, and their adjustment is a matter of some nicety. It seems that, by passing the wire between the first three nails or pins, a bend is produced in an opposite direction to that which the wire had in the coil; this bend, by passing the next two nails, is reduced to another of larger curvature in the first direction, and so on till the curvature is at last so large that it may be confounded with a straight line.

172. III. *Pointing.* A man next takes about three hundred of these straightened pieces in a parcel, and, putting them into a gauge, cuts off from one end, by means of a pair of shears, moved by his foot, a portion equal in length to rather more than six pins. He continues this operation until the entire parcel is reduced into similar pieces. The next step is to sharpen the ends: for this purpose the operator sits before a steel mill, which is kept rapidly revolving; and taking up a parcel between the finger and thumb of each hand, he passes the ends before the mill, taking care with his fingers and thumbs to make each wire slowly revolve upon its axis. The mill consists of a cylinder about six inches in diameter, and two and a half inches broad, faced with steel, which is cut in the manner of a file. Another cylinder is fixed on the same axis at a few inches distant; the file on the edge of which is of a finer kind, and is used for finishing off the points. Having thus pointed all the pieces at one end, he reverses them, and performs the same process on the other. This process requires considerable skill, but it is not unhealthy; whilst the similar process in needle-making is remarkably destructive of health. The pieces, now pointed at both ends, are next placed in gauges, and the pointed ends are cut off, by means of shears, to the proper length of which the pins are to be made. The remaining portions of the wire are now equal to about four pins in length, and are again pointed at each end, and their ends again cut off. This process is repeated a third time, and the small portion of wire left in the middle is thrown amongst the waste, to be melted along with the dust arising from the sharpenings. It is usual for a man, his wife, and a child, to join in performing these processes; and they are paid at the rate of five farthings per pound. They can point from thirty-four to thirty-six and a half pounds per day, and gain from 6*s.* 6*d.* to 7*s.*, which may be apportioned thus: 5*s.* 6*d.* the man, 1*s.* the woman, 6*d.* to the boy or girl.

173. IV. *Twisting and Cutting the Heads.* The next process is making the heads. For this purpose a boy takes a piece of wire, of the same diameter as the pin to be headed, which he fixes on an axis that can be made to revolve rapidly by means of a wheel and strap connected with it. This wire is called the mould. He then takes a smaller wire, which, having passed through an eye in a small tool held in his left hand, he fixes close to the bottom of the mould. The mould is now made to revolve rapidly by means of the right hand, and the smaller wire coils round it until it has covered the length of the mould. The boy now cuts the end of the spiral connected with the foot of the mould, and draws it off. When a sufficient quantity of heading is thus made, a man takes from thirteen to twenty of these spirals in his left hand, between his thumb and three outer fingers; these he places in such a manner that two turns of the spiral shall be beyond the upper edge of a pair of shears, and with the fore-finger of the same hand he feels these two projecting turns. With his right hand he closes the shears; and the two turns of the spiral being cut off, drop into a basin. The position of the fore-finger prevents the heads from flying about when cut off. The workmen who cut the heads are usually paid at the rate of 2½*d.* to 3*d.* per pound for large, but a higher price is given for the smaller heading. Out of this they pay the boy who spins the spiral; he receives from 4*d.* to 6*d.* per day. A good workman can cut from six to about thirty pounds of heading per day, according to its size.

174. V. *Heading.* The process of fixing the head on the body of the pin is usually executed by women and children. Each operator

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* I have already stated, that this principle presented itself to me after a personal examination of a number of manufactories and work-shops devoted to different purposes; but I have since found that it has been distinctly stated in the work of Gioja, Nuovo Prospetto delle Scienze Economiche, 6 tom. 4to. Milano, 1815, tom. i. capo iv.

sits before a small steel stake, having a cavity, into which one half of the intended head will fit; immediately above is a steel die, having a corresponding cavity for the other half of the head: this latter die can be raised by a pedal moved by the foot. The cavities in the centre of these dies are connected with the edge by a small groove, to admit of the body of the pin, which is thus prevented from being flattened by the blow of the die. The operator with his left hand dips the pointed end of the body of a pin into a tray of heads; having passed the point through one of them, he carries it along to the other end with the fore-finger. He now takes the pin in the right hand, and places the head in the cavity of the stake, and, lifting the die with his foot, allows it to fall on the head. This blow tightens the head on the shank, which is then turned round, and the head receives three or four blows on different parts of its circumference. The women and children who fix the heads are paid at the rate of 1*s.* 6*d.* for every twenty thousand. A skilful operator can with great exertion do twenty thousand per day, but from ten to fifteen thousand is the usual quantity; children head a much smaller number, varying, of course, with the degree of their skill. The weight of the hammer is from seven to ten pounds, and it falls through a very small space, perhaps from one to two inches. About one per cent. are spoiled in the process; these are picked out afterwards by women, and reserved with the waste from other processes for the melting-pot. The form of the dies in which the heads are struck is varied according to the fashion of the time; but the repeated blows to which it is subject renders it necessary that it should be repaired after it has been used for about thirty pounds of pins.

175. VI. *Tinning*. The pins are now fit to be tinned, a process which is usually executed by a man, assisted by his wife, or by a lad. The quantity of pins operated upon at this stage is usually fifty-six pounds. They are first placed in a pickle, in order to remove any grease or dirt from their surface, and also to render that surface rough, which facilitates the adherence of the tin with which they are to be covered. They are then placed in a boiler full of a solution of tartar and water, in which they are mixed with a quantity of tin in small grains. They are generally kept boiling for about two hours and a half, and are then removed into a tub of water, into which some bran has been thrown: this is for the purpose of washing them. They are then taken out, and, being placed in wooden trays, are well shaken in dry bran: this removes any water adhering to them; and by giving the wooden tray a peculiar kind of motion, the pins are thrown up, and the bran gradually flies off, and leaves them behind in the tray. The man who pickles and tins the pins usually gets one penny per pound for the work, and employs himself, during the boiling of one batch of pins, with drying those previously tinned. He can earn about 9*s.* per day; but out of this he pays about 3*s.* for his assistant.

176. VII. *Papering*. The arranging of pins side by side in paper is generally performed by women. The pins come from the last process in wooden bowls, with the points projecting in all directions. A woman takes up some, and places them on the teeth of a comb, whilst, by a few shakes, some of the pins fall back into the bowl, and the rest, being caught by their heads, are detained between the teeth of the comb. Having thus arranged them in a parallel direction, she fixes the requisite number between two pieces of iron, having twenty-five small grooves, at equal distances; and having previously doubled the paper, she presses it against the points of the pins until they have passed through the two folds which are to retain them. The pins are then relieved from the grasp of the tool, and the process repeated with others. A woman gains about 1*s.* 6*d.* per day by papering; but children are sometimes employed, who earn from 6*d.* per day, and upwards.

177. Having thus described the various processes of pin-making, without entering into the minuter details, and having stated the usual cost of each, it will be convenient to present a tabular view of the time occupied by each process, and its cost, as well as of the sums which can be earned by the persons who confine themselves solely to each process. As the rate of wages is itself fluctuating, and as the prices paid and quantities executed have been given between certain limits, it is not to be expected that this table can represent with the minutest accuracy the cost of each part of the work, nor even that it shall accord perfectly with the prices above given: but it has been drawn up with some care, and will be quite sufficient for that general view, and for those reasonings which it is meant to illustrate. A table nearly similar will be subjoined, which has been deduced from a statement of M. Perronet, respecting the art of pin-making in France, about seventy years ago.

178. *English Manufacture.*—Pins, "*Elevens,*" 5,546 weigh one pound; "*one dozen,*" = 6,932 pins, weigh twenty ounces, and require six ounces of paper.

Names of the Process.	Workmen.	Time of making 1 lb.	Cost of making 1 lb.	Workman earns pr day.	Price of making each part of a pin in 1,000,000 of 1d.
		Hours.	Pence.	s. d.	
1. Drawing Wire, (§ 170)	Man .	.3636	1.2500	3 3	225
2. Straightening of the wire (§ 171) . .	Woman	.3000	.2840	1 0	51
	Girl .	.3000	.1490	0 6	26
3. Pointing (§ 172) . .	Man .	.3000	1.7750	5 3	319
4. Twisting and cutting the Heads (§ 173)	Boy .	.0400	.0147	0 4½	3
	Man .	.0400	.2103	5 4½	38
5. Heading (§ 174) . .	Woman	4.0000	5.0000	1 3	901
6. Tinning, or Whitening (§ 175) . . .	Man .	.1071	.6666	6 0	121
	Woman	.1071	3333	3 0	60
7. Papering (§ 176) . .	Woman	2.1314	3.1973	1 6	576
		7.6892	12.8732		2320

Number of persons employed: Men, 4; Women, 4; Children 2. Total, 10.

179. *French Manufacture.*—Cost of 12,000 pins, N. 6, each being eight-tenths of an English inch in length; with the cost of operation,—deduced from the observations and statement of M. Perronet,—as they were manufactured in France about 1760.

Names of the Process.	Time of making 12,000 pins.	Cost of making 12,000 pins.	Workmn usually earns pr day.	Expense of tools and materials.
	Hours.	Pence.	Pence.	Pence.
1. Wire				24.75
2. Straightening and cutting	1.2	.5	4.5	
3. Coarse Pointing . . .	1.2	.625	10.0	
Turning Wheel* . .	1.2	.875	7.0	
Fine Pointing . . .	.8	.5	9.375	
Turning Wheel . . .	1.2	.5	4.75	
Cutting off pointed ends	.6	.375	7.5	
4. Turning Spiral . . .	.5	.125	3.0	
Cutting off Heads . .	.8	.375	5.625	
Fuel to anneal ditto . .				.125
5. Heading	12.0	.333	4.25	
6. Tartar for cleaning . .				.5
Tartar for whitening .				.5
7. Papering	4.8	.5	2.0	
Paper				1.0
Wear of Tools				2.0
	24.3	4.708		

180. It appears from the analysis we have given of the art of pin-making, that it occupies rather more than seven hours and a half of time, for ten different individuals working in succession on the same material, to convert it into a pound of pins; and that the total expense of their labor, each being paid in the joint ratio of his skill and of the time he is employed, amounts very nearly to 1*s.* 1*d.* But from an examination of the first of these tables, it appears that the wages earned by the persons employed vary from 4½*d.* per day to 6*s.*, and consequently the skill which is required for their respective employments may be measured by those sums. Now it is evident, that if one person be required to make the whole pound of pins, he must have skill enough to earn about 5*s.* 3*d.* per day whilst he is pointing the wires or cutting off the heads from the spiral coil—and 6*s.* when he is whitening the pins: which three operations together would occupy little more than the seventeenth part of his time. It is also apparent, that during more than one half of his time he must be earning only 1*s.* 3*d.* per day in putting on the heads, although his skill, if properly employed, would, in the same time, produce nearly five times as much. If, therefore, we were to employ, for each of the processes, the man who whitens the pins, and who earns 6*s.* per day, even supposing that he could make the pound of pins in an equally short time, yet we must pay him for his time 46.14 pence, or about 3*s.* 10*d.* The pins would, therefore, cost in making, three times and three quarters as much as they now do by the application of the division of labor. The higher the skill required of the workman in any one process of a manufacture, and the smaller the time during which it is employed, so much the greater will be the advantage of separating that process from the rest, and devoting one person's attention entirely to it. Had we selected the art of needle-making as our illustration, the economy arising from the division of labor would have been still larger, for the process of tempering the needles requires great skill, attention, and experience; and although from three to four thousand are tempered at once, the workman is paid a very high rate of wages. In another process of the same art, dry-pointing, which is also executed with great rapidity, the wages earned by the workman reach from 7*s.* to 12*s.*, 15*s.*, and even, in some instances, to 20*s.* a day; whilst other processes in the same art are carried on by children paid at the rate of 6*d.* per day.

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[*] The expense of turning the wheel appears to have arisen from the person so occupied being unemployed during half his time, whilst the pointer went to another manufactory.

AGRICULTURE, &c.

[*From the New-York Farmer.*]

Fair of the American Institute.—By a circular, dated July 4th, 1833, we perceive that the Sixth Annual Fair of the American Institute is to be held in this city on the 15th of October next. To the whole community this fair is of interest, affording to the manufacturer an opportunity to convince his countrymen of the increasing excellence of the products of one of the great sources of wealth to our prosperous country. To the mechanic, a place to deposit, for admiring crowds, the specimens of mechanical skill and ingenuity in the useful and ornamental arts of life. To the merchant, an evidence that American products are enlarging the sources of our commercial greatness. To the farmer, an opportunity to see what mechanical ingenuity is doing in improving agricultural implements, in inventing machinery, enabling him to increase the products of his farm, with less labor; and what positive evidence there is of the flourishing condition of American arts and manufactures, and of their varied and increasing calls on the numerous productions of the soil; and to the ladies, one of the most pleasing and profitable exhibitions of the articles of cultivated taste, to the improvement of which they have greatly contributed, and they are now again invited to make a display of those things that prove that the hand and the mind of the fair sex are not only adding to the refinements and comforts of domestic life, but augmenting the resources of national prosperity.

Troublesome Weed, (*Lithospermum Arvense.*)—This weed, sometimes called steencrout, stone-weed and wheat-thief, is very troublesome in some sections of our State. A writer in the Genesee Farmer considers summer crops unfavorable to its progress, and that two crops of buckwheat in succession will subdue it.

Peach Stones.—This is the season for preserving peach pits. They may be sown broadcast, or planted in drills, in autumn, and harrowed in, or covered to a very moderate depth.

Planting Vines Deep.—N. Herbemont, in the Southern Agriculturist, advocates the plan of planting vines deep, and suppressing yearly the surface roots. Thus managed the fruit will not be subject to rot, as the roots will not be subject to such sudden extremes of moisture and dryness.

Raising Turnips.—Mr. W. Keese, of Peru, N. Y. gives the following method of preparing his ground:

"I have raised very fine turnips for two years past, simply by fencing a small piece of ground about the first of June, ploughing it, and yarding my sheep on it, at night, until about the middle of July, when the seed was sowed and harrowed in. In this way I have not failed of having very large and very fine turnips."

Cooking Cauliflowers.—This we consider one of the best vegetables that graces our table. Although it is almost universally acknowledged to be a superior vegetable, yet our gardeners find but little encouragement in raising the plant. The following directions for cooking it are from the Genesee Farmer:

"Cut off the middle size when close and white, trim off the outside leaves, cut the stalks off flat at the bottom, and let it lie in salt and water a little while; then put it into boiling water with a handful of salt in it; have plenty of water and keep the vessel uncovered; skim the water well until it is well parboiled. Next it should be immersed in cold water for some time, say fifteen minutes, till it is nearly wanted for the table, then on being boiled for a few minutes it will become more firm and crisp than if cooked in the usual way, that is, without being immersed in cold water. A small cauliflower will require from fifteen to twenty minutes, and a large one from twenty to twenty five minutes to cook; the rule is to take it up as soon as a fork will enter the stem easily, a minute or two longer boiling will spoil it, and its excellence may be destroyed by an ignorant or careless manner of preparing it for the table.

"It may be eaten with the gravy from the meat, or drawn butter, or with vinegar, as best suits. If it is designed to imitate green peas, a little loaf sugar, previously made fine, should be sprinkled over it immediately before serving. It should never be forgotten by the cook that the water must be boiling whenever the cauliflower is put into it, whether once or twice, and should be skimmed during the time it is cooking.

"O. T.

"Mediga, June 28, 1833."

Re-potting Plants.—Those plants that were not re-potted in the spring should be during this month; and those in small pots should be transferred to larger ones without disturbing the ball of earth.

Budding.—Those who neglected to attend to this pleasing operation in July, should not fail to make the most of August. The choicest roses may be budded on the common stocks. Young fruit trees, particularly the peach, can be propagated by budding. The most common method is cutting through the bark of the stock at right angles in the shape of a T, and carefully raising the bark sufficient to insert the bud. A piece of court or sticking plaster, some grafting-wax, or pieces of matting made oily, should be provided, to secure the bud. The sharper the knife used the better. The following directions for taking the bud are from Goodsell's Farmer:

"Holding the scion by the lower, and commence the cut about a quarter of an inch above the bud, scalping off a thin piece of the wood with the bark varying from half to three quarters of an inch in length. Taking this by the petiole or leaf stem, which should be cut to half an inch in length, slip the knife along upon the upper end, gently pressing the blade upon the surface, which, as it passes the point of the wood, will cause that to rise a little from the bark, slip the edge of the knife under it, and with the ball of the thumb press the wood between it and the knife, and raise it gently from the bark. When the wood is thus detached from the bark, examine whether that part of it which enters the bud has been torn away, if so, the bud is destroyed, and should be rejected. The wood of the bud should remain level with the bark, in order that, when set, it may rest upon and unite with the stock, otherwise the bud would die after setting, although the bark might unite perfectly."

Cherry and Peach Stones.—These should be preserved much more generally than they are. Were farmers in the habit of preserving them, fruit trees would be far more common. By planting a few drills in the corner of the garden, the farmer would always be supplied with these trees to set out about his house, in his orchard, and in unoccupied places of his fields. The best way is to have a box containing earth, in which the stones, or pits, should be put, and covered while they are fresh; for, they often lose their vegetating property, if allowed to become very dry. In the spring they can be planted.

Goodsell's Genesee Farmer.—We have received the first number of a weekly periodical with this title, published at Rochester, N. Y. Mr. Goodsell has been extensively and creditably known as the editor of the Genesee Farmer, commenced two or three years ago at the same place. The exertions of Mr. G. to improve the condition of agriculture, entitle him to general encouragement, particularly of western New-York.

Farmer's Journal.—A monthly periodical, in quarto form, has just made its appearance at Rutland, Vt. under the editorial charge of E. Maxham. Both the editorial and selected matter bespeak its usefulness.

New-York State Agricultural School—Hamilton College. By A Practical Farmer. [For the New-York Farmer.]

Mr. Editor,—In your June number, page 163, is an article on the important subject of a State Agricultural School. I like your ideas much, with the exception of those in the close of the article. You there say that, "in case the experimental farm is connected with the college, it will be requisite to substitute some studies more intimately connected with agriculture for those much less so, for the agricultural students. The society should have a vote in the government of the college, and the appointment of the superintendant of the farm, and of the gardener." In respect to the studies, the reverse should be the arrangement; they should be selected and adapted to the wants of those who are intended for agricultural life, and some of these studies should be dispensed with, and others attended to in their place, to accommodate those who intend to pursue other callings. Let the institution be agricultural in all its characteristic traits. Let all the students be required to labor, and become acquainted with the practical details of farming and gardening operations. The government, too, should be principally under that of trustees appointed by the society, and the legislature, or regents of the university.

It is well known that this once flourishing and very promising college labors under many embarrassments. By a notice in the Utica Sentinel of the 9th July, I perceive a second and last appeal to the inhabitants of that place, calling upon them to take immediate measures for its relief. Should the appeal fail, "the doors of the college," says the writer, "will be closed." I do not know the result of that meeting; but I am very sanguine that the present friends of the college would find their views more fully promoted, by converting it into an agricultural institution, than persevering in this present struggling and agonizing course. Let the contemplated change go into full operation, and students would flock to the institution from all parts of the United States. Let it be conducted with prudence, judgment, and ability,—it would be continually increasing in the affection of the people at large. The prejudices of the farming community would rapidly wear away, and they soon would become its most devoted and permanent supporters. In this section of the state the union of labor and study, of theory and practice, meets with increasing admirers among farmers. A Practical Farmer.

Vernon, N. Y. July 15, 1833.

Simple Apparatus for Preparing Silk Cocoons for Reeling. By R. M. W. [For the New-York Farmer.]

Mr. Brewer's suggestion about reeling silk, is an improvement on the usual practice, but I think is yet susceptible of amendment. Make a box 12 inches square, 2½ feet long, of inch boards, put on a bottom and bore 4 or 6 holes near the edges, on the inside lay a square board smaller than the bottom by an inch all round the sides; cover the spacees between the sides and false bottom with tin, with small holes punched like a lantern, then put on the cover with hinges, which cover should be forced with a small gimblet in squares of one inch; take a coffee pot, put in it half a gallon of whiskey, or any cheap proof spirits; set the coffee pot on some live coals and the spirit will soon boil, and the steam will pass off through the spout, and may be easily led into the bottom of the wooden box. Let the box be filled with cocoons, and the hot steam thrown on them; it will soon kill all the millers, and dissolve the gluey matter of the cocoons, which will reel much better than from the water-bath. The steam of the spirits is a much greater solvent than water; the holes in the cover will lead the steam through the box, and the tin and holes at the bottom will allow any water to escape, which may be condensed during the operation. I hope yet to see the silk culture and reeling very extensively attended to in our country, and think much improvement will be made after a little experience. Yours, &c. R. M. W.

Potter, July 4th, 1833.

To destroy the Canada Thistle. By W. W. Powell. [For the New-York Farmer, and American Gardener's Magazine.]

Mr. Editor,—Your Farmer of this month has just come to hand, in which I perceive an inquiry by A. K. B. respecting the destruction of that pest, the Canada Thistle. Many plans for the attainment of that object are already before the public, but there is one which I do not recollect to have seen published. It was mentioned to me by an aged man, who has had long experience as a farmer. He assured me that he had frequently tried it, and had not in a single instance failed of success. The plan is, to mow the thistles immediately after a *honey dew.* This information being recent to me, has deprived me of the opportunity of testing its truth by actual experiment, but shall do so as soon as an opportunity is afforded. When the honey dew has fallen, may be known by touching the tongue to a leaf which is wet with it. Every farmer probably knows that honey dew is sweet; let them try the experiment, if it should prove successful, it is an easy way of extirpating what every farmer should wage war with, until this enemy, so very tenacious of life, is completely routed. Respectfully,

Westel W. Powell.

Milton, Saratoga county, June 18, 1833.

Potato Pudding.—In the hands of an economical housekeeper, no vegetable can afford a greater variety of cheap and wholesome preparation than the potato. The following is Dr. Kitchener's direction for a cottage potato pudding:

Peel, boil, and mash, a couple of pounds of potatoes; beat them up into a smooth batter, with about three quarters of a pint of milk, two ounces of moist sugar, and two or three beaten eggs.

Bake it about three quarters of an hour.

Three ounces of currants or raisins may be added.

Leave out the milk and add three ounces of butter, it will make a very nice cake.

NEW-YORK AMERICAN.

AUGUST 3, 5, 6, 7, 8, 9—1833.

LITERARY NOTICES.

The North American Review, No. LXXX.—*Boston:* Charles Bowen.—The opening article of this number is a spirited and rapid, but charming notice of the life, writings and character of *Madame de Staël*, suggested by an essay of *Benj. Constant*. We wish we had room for the whole of it—but as that is impossible, we make an extract in which à propos of her great work on Germany, and to account for what is called her boldness in publishing a work shocking so many French prejudices, a parallel is instituted between the French and German character.

The German philosophers, beginning with Leibnitz had boldly opposed the doctrines of the materialist philosophy, but Voltaire had erected against Leibnitz his whole battery of wit in his Candide, where, like a mocking demon, or like Nero, exulting over the ruins of the Imperial City, he laughs at the misery of his own species.

Besides, the antipathy existing in France to every thing appertaining to Germany was so strong, that, until its literature and the character of the nation were better known, it was impossible to penetrate the triple wall of vanity, self-interest and national prejudice, with which France was surrounded.—Nor was there perhaps any period, when the national vanity was at greater height. Though the dearly bought fruits of the Revolution were gradually perishing, the glory attached to their victorious arms consoled the nation in general. If enslaved, they were led out to battle, and their chains were wreathed with laurel.

The opposition between the French and German character had remained as strongly pronounced, as in the first periods of their history. Tacitus describes the ancient Germans as worshipping the Supreme Being in the deep silence of the forests, and disdaining all human emblems of the Divinity,—while the Gauls are represented by Cæsar as a gay and superstitious people, governed by fanatical priests, and adoring God in temples, under the form of images.

'Upon the small surface of our little Europe,' says M. de Villers, 'Nature, in one of her caprices, has taken pleasure in bringing together by the boundaries of their territory two nations, which she has placed by their genius and character at the two extremes of the intellectual line, which it is given to man to traverse. These are the French and the Germans. Though some shades of resemblance are common to both in the present modification of the European character, they offer in their general ideas, and in the views which they take of life, such contradictions, and such total opposition, that it appears as if all means of understanding one another were impracticable, and all efforts to do so, superfluous.'

He goes on to explain the causes of this difference, by the ingenious but fanciful theory adopted by a modern school of philosophy, to account for the different organization of plants and animals. which it refers to the combined action of the centrifugal and centripetal forces. According to this theory, the plant is a portion of the centrifugal, planetary or terrestrial force, attracted externally, and retained there by centripetal, astral or solar forces. The animal, on the contrary, is a portion of solar force, surprized and enveloped by a terrestrial one,—a spark of Divinity immured in clay.

According to M. de Villers, the solar force has in the French nature been equally combined with or spread through the terrestrial element, whence arise the irritability and mobility of the whole mass, its exquisite powers of perception, and the vivacity of its communications with the external world;—while in the German nature, the celestial fire is condensed into one pure flame, burning in the intellectual sanctuary. Hence the German is less strongly attracted by objects affecting the senses, but is capable of an internal strength of meditation, that occasions his intellectual irritability to be greater, and gives him a totally different sphere of enjoyment.

Solitude does not suit a Frenchman, even in sorrow. His disposition is sociable, and he must have one to whom he may recount his griefs, and who may admire the philosophy with which he supports them. The woods and the rocks are not fitting echoes for a *bon-mot* or an epigram. He prefers a city life, with agreeable companions, to whom he may talk of the charms of solitary meditation.—Madame de Staël in her lively description of the *fête* of Interlaken, observes that she met various Parisian *élegans* in the streets of Unterseen, listening to the roaring of the waterfalls in the Swiss valleys, and endeavoring to secure a sufficient portion of *ennui* amongst the mountains, to enable them to return with a fresh zest to the gayeties of Paris.

The Germans live in a world of their own, which consoles them for the bleak world that environs them, as well as for the nullity of their political existence. One of their most distinguished writers remarks, that 'the English have the empire of the sea, the French of the earth, and the Germans of the air.'

In their ardent desire to see nature restored to her moral rights, the Germans were carried too far; and while the French materialized mind, they spiritualized matter. Thus, while one of these schools of philosophy renders us unworthy of heaven, the other unfits us for earth. But the German philosophy at least is the faithful ally of religion, while in the French they stand at the opposite sides of the barrier. like rival knights prepared for mortal encounter.

It required all the genius of Madame de Staël and all the celebrity attached to her name, to obtain even a patient hearing from the French public, when she undertook to unveil to them the riches of German literature, and the superiority of German philosophy. It required a grace and tact peculiar to herself, to make her way through a host of difficulties; and we cannot but admire the clearness with which she penetrates the German character, apparently impenetrable to a French understanding.

Art II is a long and useful paper on the instruction of the blind. *Art. III*, on phrenology, hardly does justice, as it seems to us, to what there is really sound and of a tendency to improve at any rate our usual systems of education, in Phrenology. It is written manifestly by a total unbeliever in this science. We had marked some time ago in *Kidd's* Bridgewater Treatise, on the adaptation of external nature to the physical wants of man, a chapter on this subject that struck us as giving just credit, to what Phrenology really has accomplished, and defining sagaciously the limits within which it may be looked upon as a wise and sure guide. We will find an opportunity to publish it; meanwhile we need hardly add, that Dr. Kidd's views differ materially from those of this number. *Art. IV* speaks with praise and discrimination of Cushing's Reminiscences in Spain. *Art. V*, on the Penitentiary system of the United States, affords an analysis of the report of Messrs. *Beaumont* and *de Tocqueville* on the prisons and prison discipline of the United States. This report, translated by *Dr. Lieber*, and accompanied with many explanatory notes from his hand, will, we understand, be shortly published by *Carey, Lea & Blanchard*, of Philadelphia, when we shall take occasion to speak at some length of it. *Art. VI* gives to the various publications of Mrs. Child, a native writer of approved talent, a deserved meed of applause. The following poem, now for the first time seen by us, from her pen, is admirable. The subject is the painting by Vanderlyn, of Marius seated amid the ruins of Carthage.

'Pillars are fallen at thy feet,
  Fanes quiver in the air,
A prostrate city is thy seat,—
  And thou alone art there.

No change comes o'er thy noble brow,
  Though ruin is around thee;
Thine eye-beam burns as proudly now,
  As when the laurel crowned thee.

It cannot bend thy lofty soul
  Though friends and fame depart;
The car of Fate may o'er thee roll,
  Nor crush thy Roman heart.

And Genius hath electric power,
  Which earth can never tame;
Bright suns may scorch, and dark clouds lower,—
  Its flush is still the same.

The dreams we loved in early life,
  May melt like mist away;
High thoughts may seem, 'mid passion's strife,
  Like Carthage in decay.

And proud hopes in the human heart
  May be to ruin buried,
Like mouldering monuments of art
  Heaped on a sleeping world.

Yet there is something will not die,
  Where life hath once been fair;
Some towering thoughts still rear on high,
  Some Roman lingers there!'

Art. VII is devoted to a notice of *Vaughan's Memorials of the Stuarts*. This is the Puritan history of those scenes which led to the revolution of 1688; and with Hume as the Protestant, and Lingard as the Catholic historian of those same scenes and events this impartial inquirer may now have a fair chance of arriving at the truth. We should think that a republication of these volumes, which we know only from this review of them, would be found profitable in this country, where the principles for which the Puritans contended, and which their historian vindicates, have taken deep root. *Art. VIII*, on the Union, is the sequel and conclusion of the able article on the same general subject in the January number, and will be found not less deserving of attention, nor written with less force of reasoning, or warmth of patriotic feeling. *Art. IX*, which is the concluding one, on the volume lately published by Mr. Sparks—the biographer of *Gouverneur Morris*, and the editor of the Washington papers—of the private, familiar letters of *Benjamin Franklin*, gives us the opportunity of saying here, what we ought to have said before, on receiving the volume itself, that in presenting it to the public, Mr. Sparks has acquired new claims to its gratitude, as having mainly contributed to dispel the lurking prejudice yet entertained by many against the character of old Franklin. We were ourselves, we confess, of the number of doubters about some parts of his character; but we acknowledge our error. We recommend the volume itself to our readers, meantime we will here give them a sportive letter of Franklin before the Revolution had made him an American. It was written to a young lady, at the house of whose mother in London he had been on a visit.

'Paris, 14 September, 1767.

'I am always pleased with a letter from you, and flatter myself you may be sometimes pleased in receiving one from me, though it should be of little importance, such as this, which is to consist of a few occasional remarks made here, and in my journey hither.

'Soon after I left you in that agreeable society at Bromley, I took the resolution of making a trip with Sir John Pringle into France. We went out on the 28th past. All the way to Dover we were furnished with post-chaises, hung so as to lean forward, the top coming down over one's eyes, like a hood, as if to prevent one's seeing the country; which being one of my great pleasures, I was engaged in perpetual disputes with the innkeepers, ostlers, and postillions, about getting the straps taken up a hole or two before, and let down as much behind, they insisting that the chaise leaning forward was an ease to the horses, and that the contrary would kill them. I suppose the chaise leaning forward looks to them like a willingness to go forward, and that its hanging back shows reluctance. They added other reasons, that were no reasons at all, and made me, upon a hundred occasions, almost wish that mankind had never been endowed with a reasoning faculty, since they know so little how to make use of it, and so often mislead themselves by it, and that they had been furnished with a good sensible instinct instead of it.

'At Dover, the next morning, we embarked for Calais with a number of passengers, who had never before been at sea. They would previously make a hearty breakfast, because, if the wind should fail, we might not get over till supper time. Doubtless they thought, that when they had paid for their breakfast they had a right to it, and that when they had swallowed it they were sure of it. But they had scarce been out half an hour, before the sea laid claim to it, and they were obliged to deliver it up. So it seems there are uncertainties, even beyond those between the cup and the lip. If ever you go to sea, take my advice and live sparingly a day or two before hand. The sickness, if any, will be lighter and sooner over. We got to Calais that evening.

'Various impositions we suffered from boatmen, porters and the like, on both sides the water. I know not which are most rapacious, the English or French but the latter have, with their knavery, most politeness.

The roads we found equally good with those in England, in some places paved with smooth stones, like our new streets, for many miles together, and rows of trees on each side, and yet there are no turnpikes. But then the poor peasants complained to us grievously, that they were obliged to work upon the roads full two months in the year, without being paid for their labor. Whether this is the truth, or whether, like Englishmen, they grumble, cause or no cause, I have not yet been able fully to inform myself.

'The women we saw at Calais, on the road, at Boulogne, and in the inns and villages, were generally of dark complexions; but arriving at Abbevile we found a sudden change, a multitude of both women and men in that place appearing remarkably fair. Whether this is owing to a small colony of spinners, wool-combers and weavers brought hither from Holland with the woollen manufactory about sixty years ago, or their being less exposed to the sun, than in other places, their business keeping them much within doors, I know not. Perhaps, as in some other cases, different causes may club in producing the effect, but the effect itself is certain. Never was it in a place of greater industry, wheels and looms going in every house.

'As soon as we left Abbeville, the swarthiness returned. I speak generally; for here are some fair women at Paris, who, I think, are not whitened by art. As to rouge, they don't pretend to imitate nature in laying it on. There is no gradual diminution of the color, from the full bloom in the middle of the cheek to the faint tint near the sides, nor does it show itself differently in different faces. I have not had the honor of being at any lady's toilette to see how it is laid on, but I fancy I can tell you how it is or may be done. Cut a hole of three inches diameter in a piece of paper; place it on the side of your face in such a manner, as that the top of the hole may be just under the eye; then, with a brush dipped in the color, paint the face and paper together: so when the paper is taken off, there will remain a round patch of red exactly the form of the hole. This is the mode, from the actresses on the stage upwards, through all ranks of ladies, to the princesses of the blood; but it stops there, the Queen not using it, having in the serenity, complacence, and benignity, that shine so eminently in, or rather through her countenance, sufficient beauty, though now an old woman, to do extremely well without it.

'You see I speak of the Queen as if I had seen her; and so I have, for you must know I have been at court. We went to Versailles last Sunday, and had the honor of being presented to the King; he spoke to both of us very graciously and very cheerfully, is a handsome man, has a very lively look, and appears younger than he is. In the evening we were at the *Grand Concert*, where the family sup in public. The table was half a hollow square, the service gold. When either made a sign for drink, the word was given by one of the waiters, *à boire pour le Roi*, or, *à boire pour la Reine*. Then two persons came from within, the one with wine and the other with water in *carafes*; each drank a little glass of what he brought, and then put both the *carafes* with a glass on a salver, and then presented it. Their distance from each other was such as that other chairs might have been placed between any two of them. An officer of the court brought us up through the crowd of spectators, and placed Sir John so as to stand between the Queen and Madam Victoire.—The King talked a good deal to Sir John, asking many questions about our royal family; and did me too the honor of taking some notice of me; that is saying enough; for I would not have you think me so much pleased with this king and queen, as to have a whit less regard than I used to have for ours. No Frenchman shall go beyond me in thinking my own king and queen the very best in the world, and the most amiable.

'The civilities we every where receive give us the strongest impressions of French politeness. It seems to be a point settled here universally, that strangers are to be treated with respect; and one has just the same deference shown one here by being a stranger, as in England by being a lady. The custom-house officers at Port St. Denis, as we entered Paris, were about to seize two dozen of excellent Bordeaux wine given us at Boulogne, and which we brought with us; but as soon as they found we were strangers, it was immediately remitted on that account. At the Church of Notre Dame, where we went to see a magnificent illumination, with figures, &c. for the deceased Dauphiness, we found an immense crowd, who were kept out by guards; but the officer being told, that we were strangers from England, he immediately admitted us, accompanied and showed us every thing. Why don't we practise this urbanity to Frenchmen? Why should they be allowed to outdo us in any thing?

'Travelling is one way of lengthening life, at least in appearance. It is but a fortnight since we left London, but the variety of scenes we have gone through makes it seem equal to six months living in one place. Perhaps I have suffered a greater change, too, in my own person, than I could have done in six years at home. I had not been here six days, before my tailor and perruquier had transformed me into a Frenchman. Only think what a figure I make in a little bag-wig, and with naked ears! They told me I was become twenty years younger, and looked very gallant.'

THE EFFICACY OF A MOTHER'S PRAYERS ILLUSTRATED IN THE CONVERSION OF ST. AUGUSTIN, BISHOP OF HIPPO. New York: SWORDS, STANFORD & Co.—This narrative, for such it is, in simple and unadorned language, of the life of St. Augustine, was prepared by the Rev. Mr. Seabury, one of the Instructers in the Flushing Institute, for the benefit of the scholars; and is so well done as to have been rightly judged worthy of more extensive dissemination. It is accordingly printed as a tract; and we commend it to notice, as a renewed evidence of the value of that most blessed and probably most permanent of all mere human influences—a mother's early love and care.

TALES AND NOVELS, BY MARIA EDGEWORTH. Vol. VI.—*Harpers'* Uniform Edition. *Belinda* occupies this volume of this very pretty and well printed edition which is, as our readers may remember, to be completed in nine volumes.

THE PREMIUM.—*Carey, Lea, & Blanchard*, Philadelphia.—This is a pretty little volume, designed, as its name implies, as a reward to diligent students, and compiled with a view to render it, in a higher degree than the annuals generally or other similar books of which the chief value consists in the luxury of typography and embellishment—instructive as well as attractive. The selections here are well made—taken from approved European and American writers, both in verse and prose, and may be read and re-read without loss of interest.

STANLEY BUXTON; *by the author of 'Laurie Todd*, &c. Philadelphia, E. L. CAREY & A. HART.

GODOLPHIN, J. & J. Harper, New York.

DELORAINE; BY THE AUTHOR OF 'CALEB WILLIAMS.'

THE LIBRARY OF ROMANCE: Philadelphia, Carey, Lea & Blanchard: Vols. IV, V, and VI, comprising

THE STOLEN CHILD; by John Galt, Esq.

THE BONDMAN; a Tale of the Times of Wat Tyler;

THE SLAVE-KING; from the Bug Jargal of Victor Hugo.

Here is a list of novels and romances, which we can do no more than enumerate; for, sooth to say, we have not found leisure to look at any one of them except 'Godolphin,' and only at that long enough to marvel, how any one conversant with the manner of Bulwer, could have ascribed that work to him!

NEW-ENGLAND MAGAZINE, for August.

KNICKERBOCKER, for do.

AMERICAN MONTHLY MAGAZINE, for do.

Of these, we have only read the last, and with increasing approbation of each successive number; and cannot doubt that this periodical, if sustained, as heretofore, will take rank among the very foremost of its class. In referring to it, we are sorry to be obliged to call attention to an advertisement of its proprietors, alleging a sort of piracy against the *Knickerbacker*, which, unless completely explained away, must and should redound greatly to the discredit of that work. We have only a line in conclusion to say, as we do with great pleasure, that the "letters, &c. of Horace Walpole," of which we gave an account yesterday, are to be republished in the course of next week, by Mr. Dearborn, of this city.

FOREIGN INTELLIGENCE.

EAST INDIA COMPANY.—We published last week the five propositions introduced in the House of Commons on the — June by Mr. Grant, as the basis of the contemplated arrangements respecting the East India Company. To compensate the Company for the surrender of their rights and privileges, according to those resolutions, it is proposed—

"6. That their present dividends, to the amount of £630,000, which the Proprietors are in the annual receipt of, should be secured to them by an annuity, to be charged on the territorial revenues of India, and on the territorial revenues of India *only*.

"7. That at the end of the twenty years of government to be administered by the East India Company, the Proprietors shall have the right, if *then* deprived of the government of India, to demand the payment of their capital; but

"8. If at the end of that period of twenty years they should not demand the payment of their capital, then that the payment of the said annuity of £630,000 should be continued for forty years.

"9. At the end of forty years, it is to be at the option of Parliament, on giving three years' notice, to redeem the said annuity at the rate of £100 for every £5 5*s*. of annuity.

"10. That there shall be a guarantee fund of two millions; the said fund to be allowed to accumulate, until with interest it shall increase to the sum of twelve millions; the object of the said fund being to secure the regular payment of the annuity; and ultimately to be applied to the paying off the capital stock of the Company."

It is proposed—

"That in future, this country shall proceed on the American plan of apportioning the duty according to the quality of the tea; so that taxation on that article may not fall disproportionately on the consumers of inferior sorts of tea. To that end Mr. Grant recommends that the teas should be distinguished in four or five distinct classes, and rated accordingly.

"With respect to the tea now held in bond by the E. India Company, and which is calculated at about two years' consumption, the Company is to be allowed a reasonable teme to dispose of it, before the private trader is allowed to come into competition with them.

"Mr. Grant expressed his opinion that there should be no restrictions in respect to the size of vessels trading to China."

With respect to the silk establishments kept up by the Company in India, it is proposed, in order to secure the certain supply of silk to this country, that the Company should be allowed to go on with them, until capitalists be found to take the trade out of their hands.

In a future stage of the Bill, Mr. Grant announced that he should have to propose some alterations in the Ecclesiastical Establishments of India.

The following are the resolutions proposed by Mr. Grant, as they appeared in the "Votes and Proceedings" of the House of Commons:

"1. That it is expedient that all his Majesty's subjects should be at liberty to repair to the ports of the Empire, subject to such regulations as Parliament shall enact for the protection of the commercial and political interests of this country.

"2. That it is expedient that, in case the East India Company shall transfer to the Crown, on behalf of the Indian Territory, all assets and claims of every description belonging to the said Company, the Crown, on behalf of the Indian Territory, shall take on itself all the obligations of the said Company of whatever description, and that the said Company shall receive from the revenues of the said Territority such a sum, to be paid in such a manner, and under such regulations, as Parliament shall enact.

"3. That it is expedient that the Government of the British possessions in India be entrusted to the said Company, under such conditions and regulations as Parliament shall enact, for the purpose of extending the commerce of this country, and of securing the good government, and promoting the moral and religious improvement of the people of India."

Death of a Miser.—Died, at Anstruther, on the 29th of May, Alexander Sim, who had for upwards of thirty years carried on the business of a saddler, in a mean shop, and lived in one room. When not in his shop, he was quite a recluse, and his meagre appearance and threadbare garment evinced no little mortification of the flesh; he was constantly complaining of poverty and badness of the times. Nothing being known of his relations, after his funeral his shop and room were searched by the Town Clerk, and in a chest, the key of which was hid in an old shoe, receipts were found for 2000*l* deposited in different banks, and 174*l*. in bank notes were in his pockets. No will was found, but a letter from a sister-in-law, in one of his pockets, begged the loan of a few pounds. An old woman, his occasional housekeeper, says she was present when he received the letter, and he threw it from him in great wrath, declaring she should not have a farthing, as if he complied with such, he would soon be a ruined man.—It is supposed the children of the applicant are his heirs.—[Dumfries Courier.]

[*From the Courier and Enquirer.*]

JAMAICA.—By the ship *John W. Cater* we have received files of the *Jamaica Despatch* to the 13th ultimo. They present public feeling in the same aspect on the subject of the measures now in progress in England to emancipate the slaves, that we have for some time past had occasion to notice. An attempt has been made to show, that the Toleration Act, by which in the mother country, other sects than those of the Angilcan church have been permitted the free exercise of their religion, did not extend to Jamaica. The Grand Court were divided on the question, and finally settled that this law was in force n the island, but that Sectarian preachers must comply with its provisions, which require that they should apply to the magistrates in the parish where they purpose to exercise their calling for a license to preach.

[*From the Journal of Commerce.*]

LATE FROM BUENOS AYRES.—By the brig Amanda, Capt. Yorke, we have received Buenos Ayres papers to June 22d inclusive.

The Eleventh Legislature of the Province convened at Buenos Ayres, 31st May, on which day, Governor Balcarce delivered a Message containing among other paragraphs the following:

"The Minister sent by the Government of Washington, whose expected arrival was announced to you in the preceding year, and whom it was resolved to await in order to come to an explanation relative to the destruction by main force of the colony in the Island de la Soledad, (one of the Falklands) by the Captain of the United States corvette *Lexington*, did in effect arrive, and was received in the character of Chargé d'Affaires: you are, Messrs. Representatives, already acquainted with the state of this negotiation. The Government, in order to follow it up, has appointed a Minister, and has notified this appointment to that of Washington; and he will shortly be despatched with the competent instructions to obtain satisfaction and reparation for so great an injury.

"The re-settlement of the Falkland Islands was immediately resolved on, in the mode that the other attentions of the province allowed; but soon an event occurred as unexpected as disagreeable. The Government has informed you that the Captain of His Britannic Majesty's sloop of war *Clio*, sustained by a superior force, took possession of the Islands in the name of his Sovereign. Then it likewise stated to you what would be its conduct. It has therefore directed its Minister in London, that, energetically remonstrating against the violation of the most sacred principles of the law of nations, he demand the restitution, and seek such satisfaction as becomes the justice and honor of both Governments, by those means which probity, good faith, and sound reason dictate."

At an election of Representatives on *Sunday*, the 16th, to supply six vacancies in that body, serious disturbances took place, and the Government issued an order suspending the canvass. One parish, notwithstanding, continued the polls open until the usual hour of closing.

There is nothing important from the expedition against the Indians.

Capt. Stetson, of the brig Cherokee, arrived this day from Pernambuco, states that he was informed by Mr. Crabtree, a merchant at Pernambuco, that he had received a letter from the English merchants, at a small place about 60 miles from Pernambuco, stating that the Brizilians had risen on the British merchants, and massacred about 50 persons. It was said the difficulty arose from a difference in the currency of money. A United States schooner was at Pernambuco when Captain S. heard the news, which got under way immediately, to protect the merchants and property at that place.

SUMMARY.

The United States Ship of the line DELAWARE, Henry E. Ballard Esq. Commander, arrived and anchored in the offing on Friday. She is now at anchor in the North river.

The National Gazette has been misled in supposing Mr. Livingston will not embark in the Delaware. He made a preparatory visit in the ship yesterday, with a part of his family, on which occasion a salute was fired: and will sail probably early next week.

OUR HARBOR.—From the Gazette we learn that the Delaware, drawing 25 feet and 8 inches of water, (and no ship of war requires more depth,) came over the bar on Saturday, when the tide was only at one third of its elevation, and when there was a heavy swell of the sea. The log was constantly thrown, and the shoalest part of the bar, at this state of the tide, was 29 feet of water, leaving more than four feet from the bottom. Had the tide been full, she would have had nearly 9 feet of water between the keel and the top of the bar.

FORT MONROE AND THE RIP-RAPS.—We find the following account of these fortresses in the Globe of Tuesday:—

The channel which leads in from the Capes of Virginia to Hampton Roads, is, at Old Point Comfort, reduced to a very narrow line. The shoal water, which, under the action of the sea, and re-acted upon by the bar, is kept in an unremitting ripple, has given the name of Rip Raps to this place. When the bar is passed, Hampton Roads, which extend to Norfolk, about 16 miles distant, into which James River, Elizabeth River and Nansemond Mouth empty, afford the the finest anchorage in the world, and in them all its navies might ride with perfect safety. With a view of making this a secure retreat for ships of war and for our commerce, in any future contest with a naval power, Fort Monroe was built on the point, on the right side of the channel at the entrance of the Roads—and the castle of the Rip Raps is directly opposite the point, at the distance of about 1900 yards. The two forts will completly command the channel, and it will be impossible for a single ship of war to pass without the permission of the power holding the fortresses. They are so constructed, as to present immense batteries of cannon upon an approaching ship, from the moment she comes in reach, from the Capes, and throughout all the bendings of the channel it must still be under the power of the cannon; for the forts present a new aspect at every turn, and in all probability the interdicted ship would be a wreck, or a conflagration, from the hot shot thrown into her, before she completed half the circuit of the channel.

There is much salutary experience, bought however dearly, in the lessons of the late war. These waters were then the resort of the British fleets, and while all American vessels were either driven from their own harbors, or captured, the enemy made himself at home here—sent detachments to Baltimore and Washington—ravaged the shores of the Chesapeake—burnt our Capital and Navy Yards, and laid the whole country under contribution. The erection of the two Forts at this central point of our seaboard, gives a refuge to our naval force, if driven in by superior numbers, and will, in effect, not only occlude Hampton Roads to the enemy and shut him out from James River and Norfolk, our naval depot, but must deter him ever venturing up the Chesapeake Bay. If such an attempt were made, the first calm would put the most powerful fleet of an enemy completely at the mercy of a few steam-frigates or steam-batteries, which, by means of their self-moving power, would be enabled to take such position as suited them, and to set fire to the ships of the enemy with hot shot, or cut them off in detail. The shelter of these forts, too, would enable a few ships, lying in security under their guns, to sally out and take advantage of any storm which might separate a blockading force, exposed to the accidents of an open sea.

These circumstances give great importance to the works which are to form the gates at Hampton Roads—and, as a consequence, in a great degree to the whole Chesapeake Bay. Fort Monroe is already finished, and is at this moment in admirable condition, if its armament were completed. * * * *

The Rip Raps, where the President has fixed his quarters, for the benefit of the sea air and bathing, will, I trust, before long, become a noble structure. When finished, it will be a monument worthy of the people who have lavished their means in its erection, and of the genius of the Engineers by whom it was planned. The area of the structure, as originally staked off includes five acres; a great part of which was 22 feet below the surface of the sea, and that nearest the surface 18 feet. To get a foundation above water for the Fort or Castle, an Island has been raised, by throwing rocks into the water, until, by gradual accumulation, it has emerged above the tides. The rock of which this Island is formed, has been brought from great distances, and at a vast expense.

After a foundation was obtained for the Castle above high water, the building of the castle was begun, and carried up so as to form the first embrasures. It was found that the settling of the artificial mound of stone cracked the walls. The building was, therefore, discontinued; but immense masses of granite have since been brought and lodged upon the lines of the work, that the weight of the material, designed for its final completion, might be employed in consolidating its foundations. For some years this marine pyramid sunk between sx and eight inches; during the last year, although pressed with the weight of all the material gathered for the superstructure, it settled about three inches. It is the President's opinion that the erection of the Castle may now proceed with safety, and it is probable that he will direct its immediate completion.

The present aspect of the place is rough and savage, and when the surge rushes in among the hollow piles of granite, and the wind whistles among the naked spars, which are planted round the walls for the support of the scaffolding, the music of the surrounding elements of sea and air, is quite in keeping with the dreary, desolate spot, which, at a distance, looks like a Gibraltar, beaten down by cannonade, and fallen prostrate in the sea.

Nothing could add more to the grandeur of what has been justly called the *American Mediterranean*, than the elevation of the Castle at the Rip Raps—the rising of this giant of the flood, from the waves, as contemplated by Commodore Warrington, Commodore Elliott, General Armistead, General Bernard, General Swift and Major McRee, the Commissioners and Engineers, in whose design the work originated. The ancients tell us that Venus rose from the sea, but it would seem a much fitter element, to give birth to the god of War; and never was there a nobler scene, or nobler temple, than that appropriated for his cradle, by the American people, at the Rip Raps. He will appear here, not like the goddess of Love, borne in a shell upon a summer's sea, but upon a tower of strength amidst the noise of restless surges,—a fit emblem of the American people, whose martial strength belongs alike to the land and to the ocean.

It is a circumstance worth notice, that the material for the structure of the Castle of the Rip Raps is drawn from most of the commercial States of the Union. In walking over the piles with the Superintendent, a day or two since, he pointed out to me the drab grey granite of Maine—the whitish blue and the black speckled granite of Connecticut—the red freestone of the same State—the sky blue granite from near West Point, New York—the iron stone, for break waters, from the same State—the pied granite of the Susquehanna--the deep blue of the Little Falls of Potomac—and the ash colored of the James river.

In this edifice, then, which is to form a strong hold in a central position, to defend our great naval depot and to protect our naval power over the ocean, and especially to afford a place of refuge to the commerce of the nation, each commercial State may point to a portion of the blended strength which it has contributed to the common structure. The castle, at the Rip Raps, should then be called, as well from its use, as from its origin, *the Castle of the* FEDERAL UNION—and when attacked by foreign or domestic assailants, it should run up with the ensign of "the Federal Union," the watch word "*it must be preserved.*"

MINISTER FROM PORTUGAL.—The outside of letters can be seen, although the inside is sacred. We are much gratified at finding that an amiable, able, and patriotic man has been appreciated by his government. The Chevalier *I. C. De Figaniere*, who filled the office of Consul for Portugal in this city for many years has been appointed by Don Pedro as Regent, and in behalf of his daughter, *Chargé d'Affaires* near our Government. This gentleman has continued to reside amongst us up to the present time; and has gained the esteem of all. He has been rightly rewarded for his fidelity and zeal.

Perhaps the appointment above noticed, of which we apprehend there is no doubt, may afford to our Government a fair pretext for putting itself again in harmony with the liberal party of Europe, by recognizing Donna Maria. The step by which Don Miguel was so early, and, as it always seemed to us, so unnecessarily, recognized by this Government, would be thus countervailed.

The Secretary of the Navy and the Navy Commissioners arrived at the American Hotel on Tuesday from Philadelphia. After inspecting the Brooklyn Navy Yard, they will proceed to Boston and Portsmouth. We trust this opportunity will be embraced by these functionaries to satisfy themselves of the superior advantages of all sorts which this harbor possesses for a Naval Station of the first class, and that these advantages will be improved accordingly.

Lieutenant Collings Long, commanding the U. S. Schoonnr Dolphin, states in a letter to the Secretary of the Navy, dated April, 1833, Valparaiso Bay, that for the nine months previous only nine persons on board had drawn the liquor part of their rations.

Great Fire at Oswego—A slip from the Assistant Post Master at Oswego, dated August 2, 8 o'clock, A. M. and published in the Albany Argus, says, "The Post Office at Oswego, together with one whole block of stores, was burnt last night. The fire took in a blacksmith's shop.—[Journal of Com.]

QUEBEC, JULY 29.—*Hail-Storm.*—The warm atmosphere of last week was displaced by one of the sudden rushes of colder air from the northward, frequent in the climate of Lower Canada. About five o'clock on Saturday afternoon, some very dark clouds gathered in the North West of the horizon.—The wind agitated these clouds with extraordinary violence, and torrents of rain fell soon after, driven by a wind having nearly the velocity of a West India hurricane. Trees, fences and several out-houses and barns were prostrated, particularly on the Carouge, Lorette and St. Foy Roads, at the distance of two or three miles from town. A couple of barns on this side Scott's bridge have been levelled with the ground. The greatest damage was however done in the town of Quebec by the hailstones, which have broken on a low estimate from 8 to 12000 panes of glass in the different houses having a northerly exposure and situate in the Upper Town, and St. John and St. Lewis Suburbs. The extent of the hailstone shower does not appear to have been more than a couple of miles; the rain which fell at five or six miles distant from Quebec along the banks of the St. Lawrence, was but inconsiderable. The hailstones were on an average of the size of a hazel nut, and many were an inch in length. It is very many years since so much damage was done here from a similar cause.

The wind and rain does not appear to have materially damaged the standing crops.

Mr. Editor—In answer to "A SUBSCRIBER," requesting information, in your paper of yesterday's date, "as to the best mode of constructing an ice-house that will keep ice through the season," the following is submitted as the method most in use in the neighborhood of Boston, where it has been made the subject of scientific inquiry.

It must be a tight frame building, and *above* ground, the four sides of which should have an inside lining, fifteen inches apart, the intermediate space filled with tan; the floor, which should be dry ground, covered with the same material to the depth of about fifteen inches: the attic should have a board flooring, with a scuttle door for entrance, also covered with tan, say about five to six inches; over the whole, a good *tight* roof, with an entrance to the attic through the gable end. ANOTHER SUBSCRIBER.

HEALTH OF CINCINNATI.—The whole number of deaths, says the Gazette of Aug. 1st. for the week ending 30th July, was 112. Cases of Cholera 51.—We have 13 more interments than the week preceding; the proportion of cholera a little diminished. It will be seen from the Mayor's report, that on Tuesday and Wednesday, the Cholera interments advanced a little upon those of Monday.

Extensive Fire in St. John's N. F.—The Miramichi Gleaner of Tuesday, July 23d, furnishes the following information, received there by a vessel from St. John's:—

"We were kindly handed yesterday evening by a mercantile house in Newcastle, the following note:

"We have just received a letter from our friends at St. John's, Newfoundland, who state that they have had a most destructive Fire. It commenced on Sunday morning, about 3 o'clock, and in a very short time, a considerable portion of the centre of the town was destroyed. Between forty and fifty buildings were consumed.—The Isabella brought no papers."—[Standard.]

Twenty-four horses have died within three weeks in this city by disease or poison. They belonged to two different proprietors. One of them is sanguine in the belief that they are poisoned, and states that the contents of the stomach of one of his horses was examined, and arsenic was found in considerable quantities. The public is deeply interested in ascertaining the fact whether any disease is prevailing, or whether any one has been malicious and wicked enough to infuse poison into the food of horses.—[Uitca Sentinel of 30th July.]

Caution.—A fishing boat, coming into the dock, at the foot of Market street, was followed nearly up to the landing by a large Shark. As a number of boys are in the habit of bathing at that place, we notice the circumstance as a caution to them to abandon the practice.—[Charleston Courier.]

Pedestrianism.—Mr. Haskett, the pedestrian, who has undertaken to walk 2000 miles in 70 days, living on bread and water only, arrived in this town yesterday at one o'clock, from Fall River, and returned the same afternoon. He will deliver a lecture in this place this evening, at 8 o'clock, in the Lyceum Hall. We learn from the Courier that he has already accomplished the half of his tour, and is now in advance 93 miles. The first quarter he was in the rear, but in the second quarter he has made some rapid marches. Mr. H. is in good health and fine spirits, and walks with remarkable ease, carrying a large valise at his shoulders.

The subject of the Lecture will be the influence of Luxury on the character, health and happiness of man. Tickets for the Lecture may be procured at Wm. C. Taber's bookstore, and at the Merchants' Bank.—[New Bedford Mercury.]

The ship St. Louis, Capt. Story for Natchez, the first ship that ever sailed for that port, went to sea yesterday, with a cargo valued at nearly *four hundred thousand dollars.*—[Gazette.]

THE COLONIZATION SOCIETY, through its Agent, Mr. Gurley, and with the aid of many zealous citizens, is about making the attempt to raise, within this State, the sum of ***Twenty Thousand Dollars***, in order to the more efficient carrying out of their plan, for the transportation of free colored people to Africa. The proceedings of a preparatory meeting in this city will be found below; the Executive Committee appointed will doubtless at once go to work.

This Society, always important and respectable, both by its objects and the character of its members, has latterly assumed a higher degree of importance by reason of the attacks made upon it by some misguided and fanatical persons, who formerly united in its purposes, but who, having recently discovered, as they allege, that the Colonization Society is a mere cunning device of the slaveholder, to rivet more firmly the bonds of the slave—now turn all their bitterness upon it, and insist upon nothing short of immediate emancipation. Persuaded as we are that a due regard to the repose of the South, and to the ultimate advantage of the slave population itself, imperiously requires that all hasty and over-zealous attempts of this sort, should be discountenanced and disavowed, at the North, we are the more urgent, that the effort now making by the Colonization Society should be favorably looked on here; because we think its encouragement and success the most obvious and effectual answer to all, who, from whatever motive, seek to represent the opinions and aims of the few who profess immediate emancipation as their object, as the settled opinions and aims af the North.

The Colonization Society possesses the confidence of the South. Many of its leading and influential members are residents of States where slavery exists. When therefore the philanthropic efforts of the North to better the condition of the free colored population, and to afford a safe asylum to emancipated slaves, take the same direction and operate through the same channel, all jealousy in regard to these efforts will be allayed; and by mutual co-operation of all parts of the country, vastly greater results may be accomplished. Hence we repeat the expression of our hope that the sum of twenty thousand dollars, now sought to be raised by voluntary contribution in this State, will be readily obtained.

THE COLONIZATION CAUSE.—A meeting of a number of friends of the noble cause of the American Colonization Society, convened by special invitation, was held last evening, at the Consistory Room of the Dutch Reformed Church, corner of Ann and Nassau-streets. The Rev. Dr. DE WITT having been called to the chair, and offered an appropriate address to the Throne of Grace, the business of the meeting was opened by the Rev. R. R. Gurley, Corresponding Secretary of the Parent Society. He stated the objects of his present mission to the north and east—it being to make a special appeal to the public, to augment the funds of the Society. The extraordinary expenditures of last year, occasioned by the transportation and settlement in Liberia of eleven hundred emigrants in about a year, had not only exhausted the treasury of the Society, but involved it in responsibilities beyond its present means. The society is also destitute of means to transport the multitudes of emigrants who are daily enrolling their names for the colony. Mr. G. assured the meeting that a crisis had arrived in the affairs of the Society, and it was soon to be determined whether it would be enabled to proceed upon a scale commensurate with the high expectations of the country, or to languish, and thus disappoint the fond hopes of the christians and philanthropists of our country, as to its ultimate success.

In being mentioned that Captain Page, of the U. States Navy, who had last year visited the colony by orders of the government, was present in the meeting, he was requested to state such facts as to the civil and moral condition and prospects of the colony, as had particularly attracted his attention during his visit. The request was cheerfully complied with by Captain P., and his statements were such as to afford very high gratification to the friends of the cause. The colony was in flourishing condition, and the community exemplary for its morals. The climate is healthy for the man of color, the soil rich and productive; and the people contented and happy. He was in the habit of visiting the people daily, and dining with them at their houses. He saw but one discontented person there, and he was so only because he thought he ought to have been appointed to an office. Captain P. saw not a drunken person there, and in answer to questions put to him, gave very satisfactory contradictions to the statements recently put forth by the enemies of the cause, in the incendiary papers published in Boston and this city.

Captain P. having concluded, and some further remarks been made by other gentlemen, the following resolutions were moved and unanimously adopted:

WHEREAS, in the judgment of this meeting, the American Colonization Society is a truly philanthropic and Christian Institution, benevolent in its aspect towards the whole African race; and whereas this Society, is, at this time, in special need of funds to prosecute with due vigor its great enterprize; and whereas, no very general and earnest effort has, at any time, been made in this city and state to increase its resources;

Resolved, That it is expedient to adopt immediate and vigorous efforts to raise in this city and state the sum of TWENTY THOUSAND DOLLARS for the American Colonization Society.

Resolved, That a committee be appointed with full powers, to fill up any vacancies that may occur in their number, or to increase it as they may think proper, and whose duty it shall be to prepare and publish a brief address to their fellow citizens and, to adopt all such measures as they shall judge expedient to carry the object proposed in the preceding resolution into speedy and complete effect.

THOMAS DE WITT, Chairman.

WILLIAM L. STONE, Secretary.

We take from the American Monthly Magazine for this month some pretty lines from the Italian—

If every man's internal grief
  Were written on his brow,—
How many would our pity move,
  Who wake our envy now!
Stern hate would give his enemy
  A word of softer tone,—
Seeing how small the joy, that once
  Embittered all his own.

[*From the New-York Gazette.*]

Sailor's Snug Harbor.—This interesting Institution was opened for the reception of "old and worn out infirm seamen," on Thursday, the first instant, with appropriate religious services, in the presence of the Trustees, the Rev. Clergy of Staten Island, and a number of persons residing in the neighborhood. The centre building of the contemplated edifice is completed, and will accommodate about two hundred beneficiaries with comfort and convenience: but at present the number is limited to fifty, for whom the actual income will amply provide, though it is confidently expected that it will increase commensurate with the suitable subjects to be supported. The exercises in the large hall commenced at noon, with prayer by the Rev. Mr. Van Pelt of Staten Island, an address to the Sailors by Dr. Phillips of this city, ex-officio one of the Trustees of the Institution, and were concluded by prayer from the Rev. Mr. Miller, Pastor of the Church at the quarantine ground. The inmates of the establishment afterwards sat down to their first dinner in the great dining hall; and as long as they conform to the wholesome rules adopted by the Trustees, they will be here provided with every thing necessary for their comfort and happiness.

It will probably be recollected, that the late Robert Richard Randall, the Founder of the Institution, directed the asylum to be erected on the ground commonly known as the Sailors' Snug Harbor, at the upper end of Broadway; but the Trustees, after freeing the property from the vexatious and expensive lawsuit in which it was involved, taking into serious consideration that a building so situated, would not only injure the value of the land connected with it, but that its inmates would be exposed to many temptations, resolved to apply to the Legislature for permission to change the location: which being readily granted, they have, at very little comparative expense, purchased a farm on Staten Island, containing nearly 150 acres of fine land, an inexhaustible supply of excellent spring water, brought from the rear of the farm to the kitchen of the building by means of iron pipes, and commanding an extensive view of the city and bay. A steamboat stops at the wharf three times a day, and affords every facility for communication with New York.

The Trustees appointed by the will are, *ex-officio:*

The Chanceller of the State.

The Mayor and Recorder of the City.

The Rector of Trinity Church.

The Pastor of the first Presbyterian Church in Wall-street.

The President of the Chamber of Commerce.

The President and Vice President of the Marine Society.

The Trustees have appointed Capt. John Whetten, the President of the Marine Society, Governor of the Asylum.

It is creditable to Mr. Samuel Thomson, the carpenter, and Mr. Peter Storms, the mason, that they have given complete satisfaction to the Trustees, for their taste and talent in the erection of this Snug Harbor, for worn-out sailors.

Public Hydrants.—Yesterday afternoon another experiment was made with the Hydrants at the corner of Exchange and William Street, and also, at the corner of Beaver and William Street. The water was thrown over the five story store of Abraham Van Nest, 13, William Street, through forty feet of hose. The head of the water was sufficient to throw a powerful stream sixty feet high, by actual measurement. This hydrant is situated at least three miles from the reservoir. The experiment was witnessed by a committee of the Corporation, and a great number of citizens, and proved most satisfactory. It is now only about three or four years since the project was formed in the Board; since which, a well of more than one hundred feet has been sunk through a solid rock, and three horizontal shafts blasted, of about seventy-five feet in length. An abundance of water is raised into the reservoir, and thus far has never been exhausted in the extinguishment of any fire that has ever occurred. Upwards of seven miles of pipes are now laid, viz:—From Thirteenth St. down Broadway to Exchange Street; down the Bowery, Chatham Street, through William to Beaver Street; from the Bowery through Delancy Street to the river; from Chatham Street through East Broadway to Sheriff Street; from Broadway through Houston Street to Carmine St.; through Canal Street down Hudson to Chambers Street. Contracts are now made, and pipes will shortly be laid, for three miles more, viz:—Through Pearl St. from Chatham Street to Hanover Square, from East Broadway through Essex to Stanton St.; from Canal Street up Hudson to Carmine St.; from Broadway through Fourth Street to Greenwich village. When this work is completed no fire can take place in the city that cannot be reached by hose from the different hydrants. The expense already incurred, is about one hundred and fifty thousand dollars, and it is believed that more than half a million of dollars worth of property has been saved from the flames. The water is found to be of the best quality, and quite as soft as rain water. It is not expected that it will ever be used for culinary purposes; but it is gratifying to know that the great work of supplying the city is in fact, in active progress.—The pipes are sufficiently large, and are so intended to be used, when the water of the Bronx, Croton or Rye Pond shall be brought to the city: so that whenever measures shall be adopted of introducing good water, the pipes will be already laid to receive it.—[Daily Advertiser.]

[*From the Charleston Patriot, of July* 27.]

Col. William Drayton, a Representative in Congress for some years from this District, a native son of Carolina, and a resident of our city for nearly the whole period of his honored life, left our shores this afternoon in the ship Sutton, for the purpose of taking up his residence permanently at the North. It is impossible to part with a man of Col. Drayton's public purity, private probity, distinguished ability, and extensive usefulness, without the expression of a heartfelt regret at the separation. He goes, bearing with him the full measure of that reverence and respect, that popular approbation, unsolicited and unbought by popular arts, loves to bestow on the faithful public servant, and without an enemy, except such as the late unnatural estrangements in politics may have produced. We are sure that not one particle of political or other malice mingles with and taints the generosity of his nature—the native benevolence of his disposition. May the evening of his useful life be as serene and cloudless as its morning was brilliant, and its meridian effused a steady lustre.

Gimblets.—The Yankees are in a fair way to destroy John Bull's gimblet trade with this country.—The new twist gimblet is almost as much superior to the old English gimblet, as the screw auger is to the old pod auger. There is a gimblet factory at West Whately which employs 15 hands, about half of them females, and manufactures 25 gross per week. The steel is imported from England in round rods; the handles are turned out in the vicinity. There is a gimblet factory in Buckland, one in the northern part of Franklin county, one in Keene, New Hampshire, and one or more in Connecticut.

Six thousand dollars salvage has been awarded, in the case of the brig *America*, wrecked on the coast of Florida, and carried into Key West.—[Charleston Courier.]

MISCELLANY.

True Dignity.—Philosophers, and men who think beneath the surfaces of things, assert that true dignity exists in the mind, and is independent of external circumstances, whilst the great mass of mankind, imagine that it can only be found in elevated stations, and the old world particularly are given to the conclusion, that it only exists in conjunction with the pride of ancestry, and in the contemplation of a long list of noble, illustrious, and affluent predecessors. That such a contemplation may dignify the feelings, and incite the scion of such a stock to respect himself, and take the most correct means to make himself respected, is probable enough, and such an effect is very often produced. But that this true dignity of soul is not inseparably connected with such collaterals may frequently be proved. The following is perhaps as decieive upon the case as can be given:—

A boy, the son of a barber, was observed to be attentive to the petty duties of the school to which he was sent, and to labor hard to improve himself according to the small means that could be afforded to him. A solicitor in his neighborhood perceived the industry of the lad, and the propriety of his deportment; he fancied he saw in him something more than the every day production of humble life; and accordingly made an offer to the parents of the boy, to take him into his service, partly to perform duties of a domestic nature, and occasionally to assist in the office as a writer or copyist. Of course the offer was gladly and thankfully accepted. In his new situation he ever behaved with respect to his master and with propriety to those around him; but it was quickly seen, that he lent all the attention which time would permit to the study of law books in his master's library. The solicitor was not slow in distinguishing his merits, nor did he hesitate to show unequivocally his approbation of the lad's conduct; he offered to defray out of his own pocket, the fee for legal articles, and enable him to pursue the profession in his own office. Here was another important step for the youth, who now pursued his studies with ardor, and performed his duties with a zeal which only sincere and deeply felt gratitude could inspire. Yet was not adulation towards his superior, nor arrogance towards the class he was leaving behind, ever evinced from him.

He served his articles out, was entered an attorney in the Court of King's Bench, and practice followed in reasonable proportion; but our youth, now a man, was seized with a nobler ambition, and resolved to quit the grade of *solicitor*, and try his fortune at the bar. He was admitted to keep terms, passed through them, and was called to the bar with the respect and good wishes of all classes of his profession. And what had produced this universal good feeling? Not the fawning, sycophantic expressions and actions of a vulgar soul, but the modest, respectful, but independent conduct of a mind well constructed. He pursued his career with undeviating but quiet course, was gradually raised in legal eminence and legal dignity, until he became Lord Chief Justice of the Court of King's Bench, the highest common law office that can be held under the British crown.

And here, to any but one whom insult cannot injure, and whose equanimity is such as worldly caprice cannot unsettle, he received his first indignity, following hard upon his highest honor, from the same hands,—those of "the finest gentleman in Europe," by which title was recognized the late George IV.

It is customary to make the magistrate above alluded to a peer of the realm, but this was refused to the distinguished subject of this article, on the ground of low extraction. He therefore held the office with the honor of knighthood *only*, for some time;—but justice could not be withheld for ever. So happily did he deport himself in this elevated and important situation,—with such suavity to the bar, such mildness to the witnesses, such independence in the expression of opinion,—occasionally familiar, and even facetious,—that he could convulse the court with the sallies of his with, yet ever so dignified, that no one durst presume upon his good nature,—always listened to with respect,—rarely, very rarely an appeal from his judgment,—his name was equally synoimous with *justice* and *gentleman*, and at length the title came, tardily, which added nothing to his real elevation, though it gave him a seat in the legislation of the nation, as a peer,—and which in fact only added an additional duty to those he had already in his hands.

Henceforth he acted with zeal and rectitude of intention in the twofold capacity of legislator and judge, and died a short time back, regretted and respected universally.—as the *great* and *good Charles Abbot*, Lord Tenterden.

Kepler's Laws.—In casting our eyes down the list of the planetary distances, and comparing them with the periodic times, we cannot but be struck with a certain correspondence. The greater the distance, or the larger the orbit, evidently the longer the period. The order of the planets, beginning from the sun, is the same, whether we arrange them according to their distances, or the time they occupy in completing their revolutions; and is as follows:—Mercury, Venus, Earth, Mars,—the four ultra zodiacal planets,—Jupiter, Saturn, and Uranus. Nevertheless, when we come to examine the numbers expressing them, we find that the relation between the two series is not of that simple *proportional* increase. The periods increase more than in proportion to the distances. Thus, the period of Mercury is about 88 days and that of the Earth 365—being in proportion as 1 to 4.15, while their distances are in the less proportion of 1 to 2.56; and a similar remark holds good in every instance. Still, the ratio of increase of the times is not so rapid as that of the *squares* of the distances. The square of 2.56 is 6,5b36, which is considerably greater than 4.15. An intermediate rate of increase, between the simple proportion of the distances and that of their squares, is therefore clearly pointed out by the consequence of theiir numbers; but it required no ordinary penetration in the illustrious Kepler, backed by uncommon perseverance and industry, at a period when the data themselves were involved in obscurity, and when the process of trigonometry and of numerical calculations were encumbered with difficulties of which the more recent inventions of logarithmic tables has happily left us no conception, to perceive and demonstrate the real law of their connexion.—This connexion is expresed in the following proposition:—"The squares of the periodic times of any two planets are to each other, in the same proportion as the cubes of their mean distances from the sun." Take for example the Earth and Mars, whose periods are in the proportion of 3652564 to 6869796, and whose distance from the sun is that of 100000 to 152369; and it will be found by any one who will take the trouble to go through the calculation, that—$(3652564)^2 : (6869796)^2 :: (100000)^3 : (152369)^3$.—[Sir J. Herschel on Astronomy—Cabinet Cyclop.]

Instinct, &c. of Birds.—1. When the offspring require, for some time, the attention and industry of both parties to support them, animals are found to pair; but, in cases where the female alone is able to raise her progeny, the sexual intercourse is promiscuous. The affectionate attention of the parents is always adapted to the condition of their young, and is continued towards them till they are capable to provide for themselves. Man is a pairing animal. Some quadrupeds pair, and pairing is common among the feathered tribe. In winter, indeed, birds in general are without any fixed habitations; and many kinds of them appear in general flocks without any particular attention of one individual to another.—On the return of spring, however, the scene changes. The general society is dissolved, and many partnerships, consisting each of a male and female, are formed. The pair fix on a substantial spot, and by their joint labor construct a habitation. 2. Most birds prepare the nests with much care; and many of them discover ingenuity in the design and neatness in the execution. But the ingenuity and neatness belong to the species, and in no degree characterize individuals. The nest of those birds which have paired for the first time is not ruder or more inconvenient than that of those which have repeated the labor of nidification for a number of years. There is no deficiency in the first from want of instruction and practice, and the last have gained nothing by observation and experience.

The dove that perch'd upon the Tree of Life,
And made her bed among its thickest leaves;
All the wing'd habitatants of Paradise,
Whose songs once mingled with the songs of Angels,
Wove their first nests as curiously and well
As the wood-minstrels in our evil day.

The crow and the magpie, the lark and the linnet, and every other kind, has each a peculiar manner of building its nest: and every individual of the species, in similar circumstances, follows the same model, and uses similar materials. The instinctive propensity seems, in various instances, to accommodate its peculiar circumstances, both in building the nest, and in the process of incubation. In countries infested by monkeys, some birds, which in other climates build in bushes or in the clefts of trees, suspend their nests upon a slender twig, and so elude the mischieveus propensities of the monkey. With us, ravens build on trees; but in the cold climates of Iceland and Greenland, they construct their nests in the holes of rocks. The nest is always suited to the size of the bird, and to the number of its eggs and young. Many small birds display much sagacity in concealing their nests by tufts of grass, or by twigs and leaves. In the nest we see a receptacle provided for eggs before they come to maturity, yea, before the bird knows that it is to lay them. Each species lays a determinate number; and it appears that, in this process, some birds, at least, do not act under the influence of physical necessity, but have, to a certain extent, an instinctive volition.—[Fergus' Bridgwater Treatise.]

The Modern Nubians and their Ancient Monuments.—In surveying the wonders which crowd the banks of the Nile from Meroë to Memphis, we are struck with the reflection, that the wealth, power, and genius whence they derived their origin have entirely passed away. In some portions of that extensive tract, a race little superior to savages pass a rude and precarious life, ignorant of the arts, and insensible equally to the beauty and the magnificence of the ruins which they tread under foot. They have ceased even to claim connexion with the people who raised the splendid monuments of Ebsamboul, Karnac, and Dendera; and, accordingly, they ascribe the anxiety which our countrymen display, in regard to those mountains of antiquity, to the desire of visiting the tombs of a European nation, who are supposed by them to have built the temples and sculptured the obelisks. The Nubians, especially, have relapsed into that low condition, where even curiosity has become dormant, and in which the eye can be every day fixed on the noblest works of human ingenuity without suggesting any speculation as to their authors, their epoch, or their design.—Throughout the whole world, in short, there is no greater contrast to be witnessed than between what now is, and what must once have been, in Ethiopia and Egypt. There is even great difficulty in passing, by an effort of thought, from the one condition to the other, through the various scenes of conquest and desolation which seem necessary to have produced the effects we contemplate. We might question history; but we would receive no answer, as to the events and characters which the lapse of three thousand years has thrown into an impenetrable obscurity. Surrounded with darkness, we grope our way amidst superb structures, dedicated to gods and heroes whose names make but a faint impression on our ears; and we satisfy ourselves with the conclusion, that a great people had existed there before the era of recorded time, whose literature and philosophy have been outlived by their architectural monuments.—[Edinburgh Cabinet Library, No. XII. Nubia and Abyssinia.]

Conscience.—Had God been an unrighteous Being himself, would he have given to this, the obviously superior faculty in man, so distinct and authoritative a voice on the side of righteousness? Would he have so constructed the creatures of our species as to have planted in every breast a reclaiming witness against himself? Would he have thus inscribed on the tablet of every heart the sentence of his own condemnation; and is not this just as unlikely as that he should have inscribed it in legible characters on the forehead of each individual? Would he have so fashioned the workmanship of his own hands; or, if a God of cruelty, injustice, and falsehood, would he have placed in the station of master and judge that faculty which, felt to be the highest in our nature, would prompt a generous and high-minded revolt of all our sentiments against the being who formed us? From a God possessed of such characteristics, we should surely have expected a different-moulded humanity; or, in other words, from the testimonies on the side of all righteousness, given by the vicegerent within the heart, do we infer the righteousness of the Sovereign who placed it there.—[Dr. Chalmers.]

Lachin y Gair.—"The Rev. J. D. Glennie, who visited the scenes in the Grampians which are associated with Byron, says, 'We asked our guide, a sturdy old Highlander of seventy, whom we could scarcely restrain from walking too fast for us up the hills, whether there were any fish in the lochan; on which he told us, with a mysterious look, and in an under-tone, that there were plenty, and fine fish too, but nobody ever fished there; for, 'as he had heard say,' the last person that tried it had good sport for some time, but at last he observed a man on the opposite side of the lake, under the rock, fishing also, throwing his line exactly as he did, and pulling out fish only when he did it himself. Not knowing what to make of so strange a circumstance, the angler shifted his ground, when, wonderful to relate! his opposite neighbor at once vanished! He was evidently something 'no caney,' added the old man, and nobody has ever fished in that loch since.' In these regions of mist, such an apparition might very probubly occur, and would be sure to make a lasting impression upon the fears and imaginations of the superstitious Highlanders."—[Works of Lord Byron.]

Ali Pacha.—This use of military costume, to support or assume the character of a soldier, is not uncommon among *very peaceable* travellers on the continent. It once happened that a party, chiefly military men, aware of the better reception which a red coat would obtain at the court of Ali Pacha, took their uniforms. One of them, a young man, who could not boast of any regimentals except what he had worn in one of the London companies of volunteers, took these for want of better. At Yanina they were received by Ali Pacha with much courtesy; and, upon addressing the young traveller, Ali said to him, 'Where have you served?' This would have been a poser to most men in the same situation; but he won more honor by his wit than he had done by his sword; for his ready answer was, '*upon Wimbledon Common.*' Ali had too much tact to betray his ignorance of the battle or the place; and our city hero passed with the tyrant for a distinguished warrior.—[Illustrations of the Life and Character of Lord Byron.]

The Bishops not one of the "Estates."—Lord Clarendon, who, though Lord Chancellor, had no more pretensions to the character of a lawyer, than he had to that of a man of honesty and veracity, is very fond of insisting that the bishops are "*one of the estates of Parliament;*" and yet, in one part of his history, he admits that the presence of the bishops in the House of Lords; "was *not* so essential that no act could pass without them." Upon this passage Bishop Warburton makes the following just remark:—"But their presence is thus *essential* on the historian's principle, that the bishops constitute a distinct estate in Parliament. *But the principle is false.* If they did constitute a distinct estate, they must have a *negative voice*, as every other of the distinct estates have. Their having it not, shows they are no such distinct estate."—[Times.]

Specimen of Irish Reasoning.—"Och! Grace, honey, it would do your heart good to hear the fine discourse I heard fron Tim Fogarty, the schoolmaster at Abbey side, whin he was converting Dick Nowlan. Dick, like a poor ignorant creathure as he is, said that the Protestant religion was the best, for says he, 'Isn't it the *reformed* religion, and a'n't ye all crying out for reform from morning till night, and here's a reformed religion ready made to your hand?' 'Wey then bad luck to you, ye spalpeen,' says Tim, 'sure the *Roman* is the only old thrue faith; didn't you see or hear of Paul's Epistle (which means a letther) to the Romans?' 'Yis, I did, sure enough,' says Dick. 'Well, then,' says Tim, 'did ye ever see or hear of Paul, or any other of the saints, writing a letter to the Protestants? Now, Dick, what have you got to say?' "Faith, Grace honey, that foolish fellow, Dick Nowlan, was dumb founded, and could not say bo to a goose; and who after that, could doubt the Roman Catholic religion being the only thrue one; and who could help wishing to convert the good masther and Parson Disney, and the rest of the good people, to it?"—[The Repealers.]

How are the Stars the Poetry of Nature?—Not certainly on account of their visible splendor: for the gas lamps in a single street of this metropolis outshine the whole hemisphere on the clearest winter evening: nor on account of their beautiful configurations; for the devices chalked on the floor of a fashionable ball-room, to the mere animal eye, would be more captivating. It is from causes having affinity to mind, not matter; to truth, not semblance; that the stars may, indeed, be called the poetry of heaven.—The bodies alone appear to us the identical luminaries, in size, lustre, movement, and relative position, which they appeared to Adam and Eve, in Paradise, when—

"At their shady lodge arrived, both stood,
Both turned, and under open sky adored
The God that made both sky, air, earth and heaven,
Which they beheld; the moon's resplendent globe,
And starry pole."—*Paradise Lost, Book IV.*

They appear to us the same as they did to Noah and his family, when they descended from the ark in the silence of an unpeopled world; and, as they did to the builders of Babel, when the latter projected a tower whose top should reach heaven. [By the by we do not know whether La Place would agree to this.] Once more—and oh! how touching the thought—the stars, the unchanging stars, appear to us with the same placid magnificence as they were seen by the Redeemer of the world, when, having sent the multitude away, he went up into a mountain apart to pray; and when evening was come he was there alone, "and continued all night in prayer to God."—Matt. xiv. 23.—Luke vi. 12.

"Cold mountains and the midnight air,
Witness'd the fervor of thy prayer;
The desert his temptation knew,
His conflict and his victory too."—*Watts.*

The stars, then, have been the points where all that ever lived have met; the great, the small, the evil, and the good; the prince, the warrior, statesman, sage; the high, the low, the rich, the poor; the bond and the free: Jew, Greek, Scythian, and Barbarian. Every man that has looked up from the earth to the firmament, has met every other man among the stars, for all have seen them alike, which can be said of no other images in the visible universe! Hence, by a sympathy neither affected nor overstrained, we can, at pleasure, bring our spirits into nearer contact with any being that has existed, illustrious or obscure, in any age or country, by fixing our eyes—to name no other—on the evening or the morning star, which that individual must have beheld a hundred times,

"In that same place of heaven where now it shines,"

and with every aspect which the beautiful planet wears to us, and with which it will continue to smile over the couch of dying or the cradle of reviving day.—[James Montgomery's Lectures on Poetry, &c.]

Some years ago, when the famous Dr. Leib was figuring in political life, when prejudices were strong, and party feeling ran high, application was made to the Legislature of Pennsylvania to incorporate a "Life Insurance Company" for the term of fifty years. A zealous member rose and addressed Mr. Speaker with, "Sir, I don't like this bill, and shan't vote for it. The petitioners have asked to be incorporated to insure lives for fifty years, and what will be the consequences of granting their prayer? why, the first thing you'll know, that Dr. Leib will get his life insured for the whole time, and we shall have him tormenting us for half a century to come."—[N. E. Review.]

MARRIAGES.

This morning, at the Cathedral, by the very Rev. Dr. Power, AUGUSTE DE NAUTEUIL, of France, to ANGELE, second daughter of Lewis Binsse, Esq. of this city.

On Saturday evening last, by the Rev. Dr. McCartee, Mr. JACOB WILLEE, to Miss ELEANOR C. daughter of Mr. William More, all of this city.

On Sunday evening, Aug. 4, by the Rev. Wm. G. Miller, Mr. THOMAS T. HENDLEN, to Miss EMELINE TAYLOR, both of this city.

On Wednesday evening last, by the Rev. Mr. Baldwin, Mr. GEORGE F. SEARING, to Miss MARY ANN WOODHOUSE, all of this city.

Last evening, by the Rev. Wm. Patton, ANTHONY LANE, to ELIZABETH S., daughter of Oliver Willcox, Esq. all of this city.

On Tuesday, Mr. SAMUEL D. JOHNSON, to Miss EMELINE TICE.

On Monday evening, by the Rev. F. H. Cuming, JOHN MEEK, to Miss CATHERINE ADAMS.

On July 15, FRANKLIN WHITNEY, to MARY HENRIETTA GLADD.

At New-Orleans, J. M. Mason, to Miss Angeliner Eliza Sheils.

On the 31st July, at Bolton, (Mass.) by the Rev. J. W. Chickering, Mr. GUSTAVUS U. RICHARDS, of this city, to Miss ELECTA B., daughter of S. V. S. Wilder, Esq. of the former place.

On Wednesday evening, July 31, by the Rev. Dr. Milnor, Mr. BENJAMIN RICHARDS to Miss JANE HAIGHT, daughter of the late Judge Scott, of Catskill.

On Wednesday morning, July 31, Mr. ALEX. MCKENZIE, to Miss MARY GARDNER.

On Monday evening, July 29, Mr. JOSEPH TAYLOR, to ELIZABETH KIZER.

On Monday, Mr. HENRY MILLER, of the firm of J. D. & H. Miller, to Miss Jane C. PHILIPS.

On Monday evening, Robert Cochran, to Agnes Kirkwood, both of Galway, N. Y.

At Albany, Edward S. Willet, to Miss Elizabeth M'Chesney.

On Monday evening, at St. George's Chapel, by the Rev. Dr. Milnor, EDW. F. WOODWARD, of England, to Miss SUSAN O., fourth daughter of the late Thos. Betts, Esq. of L.I.

On Wednesday evening, Mr. ANDREW KIRKWOOD, to Miss JANE NICHOL, both of Galway, N. Y.

DEATHS.

On Monday morning, 5th instant, WILLIAM, only son of Wm. Chapman, aged 13 months.

Suddenly, on Monday evening, 5th instant, in the 46th year of his age, Mr. GEORGE KINSHIMER.

On Friday last, HENRY COLMAN, aged 14 months, son of the Rev. F. H. Cummings.

Yesterday afternoon, WILLIAM FAGAN.

This morning, after a short and severe illness, Miss CATHERINE POOLE, aged 22 years.

At Yonkers, on the 2d inst. Joseph Oakley, in the 82d year of his age.

On Tuesday morning July 30, at Washington, N.C. in the 18th year of his age, Julius H. Bulkley, son of Edmund Bulkley, of this city.

On Sunday morning, 4th instant, of consumption, CHARLES RUSSELL BULLARD AVERY, infant son of the late Samuel P. Avery, aged 9 months and 22 days.

Sunday morning, 4th instant, Mr. ISAAC COUTANT, in the 36th year of his age.

Suddenly, on Saturday evening, August 3d, (at her late residence, No. 86 Grove st.) Miss Rebecca Herbert, in the 43d year of her age.

At Saratoga Springs, on the 31st ult., after a short illness Samuel Snow, Esq. of Petersburg, Virginia.

Last evening, after a long and painful illness, THOMAS STURM, Esq. aged 85 years.

On the 4th instant, Mr. ROBERT WAITE, eldest son of the late Robert N. Waite, Esq.

In this city, (Cincinnati, Ohio,) on Friday last, July 26th, (of billious cholic, terminating in cholera,) Mr. Richard Phillips, Gilder, in the 34th year of his age, formerly of New-York.

The deceased arrived in this city in October last, where he continued to reside until his death. He was a young man of amiable manners and correct habits.

It is understood that the deceased has a brother and sister in New-York, as also a brother in Boston. Should the above notice reach them, and they wish to obtain any further particulars, they will please address C. W. James, Cincinnati. To this end the New-York and Boston papers will please notice the above.

Of Cholera, at Bardstown, Kentucky, after a few hours indisposition, WM. ROWAN, and Mrs. ROWAN, his wife—A. H. ROWAN, and MARY JANE STEELE, sons, daughter-in-law, and grand daughter of Judge John Rowan. On Friday 26th inst. all four of them were deposited in the same grave.

At Bloomingdale, on the 4th instant, RACHEL HEGEMAN, in the 52d year of her age, wife of Nicholas F. Hegeman.

Yesterday morning, at his late residence, Bushwick, Newtown, Colonel GEORGE GIBBS, in 57th year of his age, formerly of Newport, R.I. where the remains will be taken for interment.

At Fort Mitchell, Ala. Eliza, consort of Major James S. M'Intosh, of the U. S Army.

In Rockingham, Va. Frances W., wife of Wm. H. Gray.

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Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.

J25 tf

☞ **GRACIE, PRIME & CO.** offer for sale, at 22 Broad street—

2 cases Gum Arabic
20 do. Danish Smalts, EFFF
10 do. Saxon do. do } Reduced Duty
100 bags Saltpetre
2 do. Gall Nuts; 20 tons Old Lead
100 do. Trieste Rags. FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do. Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
30 do. Molleres Almonds
148 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

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10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
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2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
2 do. White Quiltings
10 do. Borrle's Patent Thread, No. 22 and 25
10 do Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
23 bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35. 24½x36, 21x34½. 26x36, 26x37, 29x41. 27x38½. 24x38, 24x29, 24x28, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.
5 cases each 1600 Sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
3 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do do do Red do Gold do
2 do do do White do Silver do. A2

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the Instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other decription of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J B. Jervis. Eng. M. & H. R. R. Co, Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F31 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD. U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

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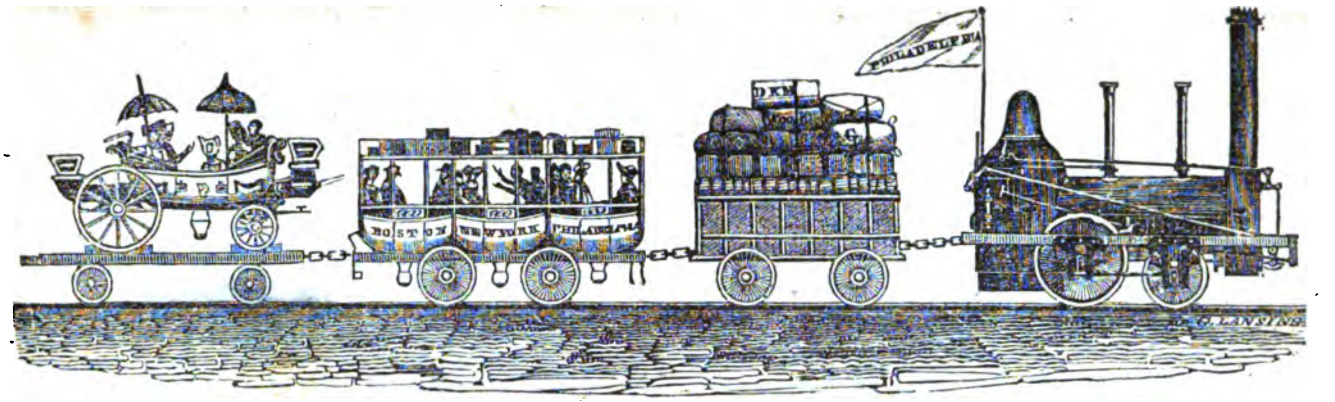

AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, AUGUST 17, 1833. [VOLUME II.—No. 33.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, AUGUST 17, 1833.

To Correspondents.—The communication of V. D. G. "on the construction of curves for arches," and of Mr. Sullivan, "in further reply to Mercator," are received, and will appear in our next. We are also indebted to J. M. Fessenden, Esq. for his late report upon the Boston and Worcester Railroad, and to an unknown friend for a late and interesting account of the South Carolina Railroad, both of which will receive an early notice.

In our last, we referred to the contemplated railroad through New-Jersey and Pennsylvania to the Great Bend of the Susquehanna river, near Binghampton, in the state of New-York, and we are now enabled to give the reports of the engineers who surveyed that part of the route in Pennsylvania, between the Water Gap on the Delaware, and Pittston on the Susquehanna, and one of the routes between Lackawanna Creek, near the centre of Blakely township, in Luzerne county, and the Great Bend of the Susquehanna. These reports show a more favorable route than we had anticipated. We shall refer to the subject again soon, and hope to be able to give some account of the line in New-Jersey, between Elizabethtown and Belvidere, and to the Water Gap.

Railroad Map; or, Map of Railroads.—We have often felt the want of a map upon which we could find delineated the *route, connection, and intersection*, of the various and numerous Railroads now constructing, and in contemplation, in the United States; but without any expectation of, at present, being relieved from the difficulty. We are, however, gratified to learn that a friend of ours, who has been much engaged in Railroad surveys and explorations, is now engaged and far advanced towards the completion of a map of that section of the United States lying north of the Potomac and east of Lake Erie, upon which he intends to delineate all the Railroads and Canals of which he has been able to obtain any account. There are several, however, of which he has been unable to obtain either a report or a map, and of course cannot rely upon the correctness of his accounts of them. We, therefore, once more ask of those of our friends who may have surplus copies of Railroad Reports, and especially those having maps attached to them, and of recent date, to oblige us with one—we promise to put them to good use, and hope to be able to return the favor in good time. It is a subject of no small importance at this time, when so much is said about Railroads, that there should be a map, showing the route, *connection*, and relative position of the different roads. Such a map will forcibly demonstrate the immense advantages of Railroads, but more especially of *long* and *continuous lines* of Railroads.

The following question has been submitted to us for publication, with a view of obtaining an expression of opinion upon the subject. We do not recollect to have seen any account of experiments having been made with a view of deciding that question, and are, therefore, the more desirous of eliciting information relative to it. Our friends, who may have made or witnessed experiments of the kind, or who can give the desired information, will greatly oblige us by communicating the facts for publication.

When the face of the country will admit of a location for a railroad, either for stationary or locomotive power, with the same expense of construction, how many feet per mile will a locomotive engine ascend, and be equal to the expense of stationary power, for the transportation of freight, allowing the freight equal both ways?

Short and Easy Sentences.—We like *brevity—especially* such as the following—which we most *feelingly* recommend to the thousands who do *not* take the Journal—it does us good to read them—but to the letters. The first reads as follows:

"*To the Editor of the Railroad Journal:*

"Sir,—I want your Journal. Enclosed I send you, *in advance*, one year's subscription, and am your friend, —— ———."

The other comes under somewhat different circumstances, but is none the less acceptable. It reads as follows:

"*To the Editor of the Railroad Journal:*

"Sir,—I have been a subscriber to your Journal since its commencement. I paid the *first* year in advance, and have never regretted it; but circumstances have prevented me from remitting, at an earlier date, for the *present* year. I therefore now send you $5, which you will place to my credit, and believe me still your friend, —— ———

"———, August 1, 1833."

We consider the foregoing as well worthy the attention of those who *are not* subscribers, or, being subscribers, have been too busy to remit, for the current year, for the Journal.

Parley's Magazine.—We have received the first part, consisting of seven numbers, of Parley's Magazine, done up in paper cover, by Messrs. Lilly, Wait, & Co., Boston. This work is particularly designed for children, and we know of no other so well calculated to give them a relish for reading. It is embellished with numerous engravings, with a description of each, which always affords instruction as well as amusement. Parley's Magazine is published every other Saturday, in a convenient form for use, with 16 pages to each number, at one dollar a year.

Important Railroad Improvement.—The Philadelphia Franklin Institute having offered a premium of $250 for the discovery of some mode to protect passengers and property from the sparks emitted from the Railroad Locomotives, we understand that Mr. Young, a skilful mechanic of Norfolk, Va., has invented a machine which entirely remedies the evil, the construction of which is simple and cheap,

Mad River Railroad.—The annexed article from the *Western Pioneer*, printed at Springfield, Ohio, indicates a movement amongst those who are interested in this important link in the projected improvements in that growing state. It may truly be considered as one of the most important of the numerous contemplated railroads in Ohio. It will pass through one of the most fertile sections of that state, and open a direct, easy, and cheap mode of travel and transportation, by which the value of property, contiguous to it, say within ten miles on each side, will be increased, when the road is ready for use—more than twice the cost of the railroad. The thousands of acres, at present, of uncultivated land, will soon be made to contribute to the already immense business of our canals and our contemplated railroads. The forest will be made to blossom as the rose; towns and villages will spring up with their numerous dwellings and beautiful public edifices, where now is only to be found the lofty forest trees of a thousand years' growth, amidst which reside a few lingering remnants of those numerous and warlike tribes of red men, who were, but a few years since, masters of the boundless west.

The natural make of the country is highly favorable to the construction of a railroad; which may be made at a very cheap rate, and used either with horse, or locomotive power, as may best suit the business and wants of the country.

Should the commissioners decide to open their books in this city, they will find, we trust, that the measure is duly appreciated by those who have the means of increasing the business and prosperity of this city, by securing to it the trade of the thousands of square miles of the most fertile country in the world, west and southwest of Lake Erie. It is an object well worth the attention even of the first commercial city of the new world; but, if secured at all, it must be done by *immediate* and *strenuous* efforts, as New-York has two rivals, of no small consideration; and, if they do not count a population as numerous, they can at least boast of their enterprise, and the progress they have already made in their works towards the grand object for which we are *all* aiming, *the trade of the West,—the increase of which will, in twenty years, be equal to the present entire trade of the whole United States, and afford constant employment to all the canals and railroads which can be made in the mean time, to connect it with the sea-board.*

Mad River and Lake Erie Railroad.—We understand that a general meeting of the commissioners of the Mad River and Lake Erie Railroad has been called, and is to take place on Wednesday next, 31st. inst. at this place. We are much pleased to see that some interest is beginning to be felt on this important subject. The interests of a large body of our citizens, inhabiting a tract of country stretching from Dayton to the Lake, unrivalled for the fertility of its soil, capable of supporting a dense population, and which needs only an outlet for its produce to render it one of the best portions of the State, are deeply involved in the measures that may be adopted at this meeting.

It is understood that an estimate of the cost of the road, together with such other information as will enable the Commissioners to make arrangements for opening the books for subscriptions, without delay, will be laid before the Board, by the U. S. Engineers, by whom the survey has been made. These gentlemen have been busily engaged in making the necessary surveys during the present season, and we understand that their opinion of the cheapness and excellence of the route is in the highest degree favorable. The grade of the road, we are informed, need in no case exceed 50 feet in the mile, and will reach that only in a few instances, and for short distances. The radius of curvature will not be less than 5000 feet, and in some cases will be more than four miles. The proportion of curves to straight lines is very small.

Upon the whole, from all the information we can gain upon the subject, we believe that no route has been examined in the United States presenting anything like as many facilities for the cheap and easy construction of a work of this description. In no instance that we ever heard of, has a railroad been located 150 miles in length, requiring no change of the power employed in transportation upon it. But on the road in question, no such change will be necessary; a locomotive engine, with its train of cars, can traverse its whole distance with ease, as there is not an inclined plane upon the route rendering the intervention of stationary power necessary.

A slight inspection of the map of the United States will be sufficient to satisfy any one of the importance of this route, as a link in the chain of communication from Albany to the Ohio River; indeed, from Buffalo to Dayton, *via* Sandusky City, the route is as direct as could be desired. Its importance to the commercial interests of the State of New-York is self-evident. It will be the only work that can at all prevent the trade of this country, especially that of Cincinnati, from being diverted to Baltimore and Philadelphia, when that great work, the Baltimore and Ohio Railroad, shall be finished to the Ohio. The facility with which our merchants could then travel over the mountains would be a great inducement for them to take that route, independent of the advantages of a choice of three markets. Should this road, however, be constructed, merchandise from New-York and Philadelphia could reach the Ohio in less time than by any other way, especially should a railroad be made from the Hudson to Lake Erie, as is contemplated. The Baltimoreans are fully aware of this, and are pushing on their great enterprise with all the energy of which they are capable. It is to New-York then that we must look for the means for the construction of this road, and we think we may look for it with confidence, as, without taking into consideration the great advantages to be reaped by her, especially from its construction, no doubt can be entertained that the stock will pay a handsome interest, considered merely in the light of an individual investment.

We suppose the course of the Commissioners at the coming meeting will be to despatch agents to the eastern cities to open the books and obtain subscriptions to the stock, as soon as may be. Should suitable men be obtained for this purpose, not the slightest difficulty, we apprehend, will occur in raising the requisite sum. No time ought to be lost, if such a course be adopted. Railroad stock is in good odor now, and there is a "tide" in railroad, and all other stocks, as well as "in the affairs of man." Let intelligent and respectable men be sent immediately to Albany, New-York, Buffalo and Rochester, to lay the claims of this great work properly before the capitalists there. In the selection of these agents, if men could be found personally known to these capitalists, so much the better If men of respectability, their representations wiil command respect and credence.

We have thrown these remarks hastily together, to call the attention of our readers to this subject. It is one in which all are deeply interested, and which is intimately connected with the prosperity of the whole of that part of the State through which the road will pass. Should any farther information come into our possesion after the meeting of the Board of Commissioners, our friends may depend upon receiving it at as early a day as possible.

In conclusion, we exhort all friends of the enterprtse to join heart and hand, and do what they can to forward it to its completion. Let us put our own shoulder to the wheel, and then call on Hercules, and we may be sure of success.

A Report of the Chief Engineer on the Survey of a Route for the proposed Susquehanna and Delaware Railroad, from Pittston, on the Susquehanna, to the Delaware River, at the Water Gap.

To David Scott, and others, *Commissioners, &c.*:

Gentlemen,—In compliance with a request from your Board, communicated to me in the early part of the past summer, I examined the country between the Susquehanna at Pittston, at the junction of the Lackawanna and the Delaware River, at its pass through the Blue Ridge, called the Delaware Water Gap; and also directed the execution of such surveys as were deemed necessary to determine the feasibility and probable expense, of constructing a Railroad between those points, by which it appears that the scheme is not only practicable, but that the object may be effected without encountering any inordinary difficulties, and at a comparatively reasonable expense.

Time and circumstances permitted the survey of but one route, in which the survey and levels were minutely taken, and the surrounding country as much explored as the nature of the case would permit, for which I am bound to acknowledge my obligation to the intelligence and assiduity of R. J. Germain, Esq., Civil Engineer, assisted by Messrs. Provoost and party.

The surveyed route being that which forms the basis of the estimate, will be the subject of the following remarks.

It commences at the junction of the Lackawanna with the Susquehanna River at Pittston, and runs from thence up the Lackawanna Valley to the mouth of Roaring Brook, thence up the valley of that stream to Lake Henry, a tributary of Roaring Brook, and from thence, crossing the head waters of Lehigh upon the table lands which form the dividing ridge between the Susquehanna and Delaware Rivers to the head waters of Anatomak or Broadhead's Creek, passing down the Pocono, one of its tributaries, through Stroudsburgh, thence down the main stream, approaching the Delaware in front of Detottsburgh at the head of the Water Gap.

The elevation of the summit above the Susquehanna and Delaware Rivers respectively, is 1366 feet and 1599 feet, and the distance about 70 miles. This we divide into two, the Eastern and Western Division, which for the sake ot perspicuity is divided into sections corresponding with the different grades to which the line is best adapted, as suggested by the various features of the ground.

It is, however, worthy of remark, that on either side of the summit through the valleys of Roaring Brook and Broadhead's Creek and its tributaries, the location will be upon a transverse slope, where any grade may be sustained that the circumstances of the case may require, hence, such grade was assumed in the survey as would admit of the advantageous use of locomotive engines. The maximum angle of ascent on the Western Division in the direction of the greatest trade, being 26 feet per mile, that on the Eastern Division, in the opposite direction, 40 feet per mile, which is not objectionable, in as much as the power necessary to transact the regular business of the Western Division, would perform the return business up a much steeper grade.

In the arrangement of the different grades for the application of locomotive, mechanical, or animal power, 666.5 feet of elevation is overcome on the Western Division, and 774 feet on the Eastern Division, leaving to be surmounted, by inclined planes requiring stationary power, 699.5 feet on the Western, and 855 feet on the Eastern Division, for which, as indicated by the survey, six inclined planes will be necessary, three upon each division. To those on the

Western Division the waters of Roaring Brook may be introduced as the moving power.

In descending from the summit eastward into the Valley of Pocono, the line may be much improved and shortened by dividing inclined planes No. 1 and 2 into three planes, in such manner that neither shall overcome an elevation exceeding 250 feet, nor occupy a distance of more than half a mile; the line in consequence will be more direct—the inclined planes being reduced—better adapted to a great trade, and their location such, that the head waters of Pocono and Broadhead's Creek may be introduced at their summits as the propelling power. With this arrangement there will be seven inclined planes upon the whole route, to all of which water may be introduced in quantities sufficient to equal the greatest trade that can ever be anticipated, and may be used as a substitute for steam power, either in propelling machinery or as a preponderating power upon a self-acting plane.

In addition to the improvements suggested, there is no doubt that upon a more thorough examination many more will suggest themselves, whereby the line may be much improved, and distance diminished, without increasing expense.

Suitable materials for the execution of all mechanical constructions are abundant and convenient; in short, in computing the estimate I have had particular reference to the copious field notes and observations taken upon the ground, and, while on the one hand I have intended not to swell the amount to an extravagant degree, so, on the other, I have endeavored to make it fully adequate to the construction of the work, in a permanent manner.

The line generally is favorable in regard to curves, none very abrupt occurring, consequently no extra expense will be required to avoid them.

The formation of the road-bed should be calculated for a double track, in as much as that from its location it cannot be long after the first is completed before a second will be required, and should the grading be omitted until such necessity is experienced, the additional expense of widening the grade beyond what it would have been in the first instance, would be very great. Not so with the superstructure; the effect is different, and good policy would dictate the laying down first a single track, and make its advantages available in the transportation of materials for the second. An advantage, too, to be derived in grading in the first instance for a double track is, that by the time the second is required, the road-bed becomes settled and prepared for the reception of permanent materials; accordingly the following estimate of cost for forming the road-bed is with a view to a double track.

The *Eastern Division* includes all that part of the line between the main branch of the Lehigh River and the eastern termination upon the Delaware, and embraces the following grades:

	Remarks.	Length of each grade in miles.	Descent in feet per mile.	Descent of each grade in feet.	Expense of forming the road bed of each grade
1.	From Lehigh River Eastward . . .	11.	Level		$51416 75
2.	Commencement of eastern slope . .	4.	22.5	90.	13408 24
3.	Grouse Plain do. .	2.30	Level		21406 66
4.	Descending side of Pocono Mountain .	4.98	40.	199.	24880 40
	Inclined Plane No. 1	0.62		350.	943 00
	Inclined Plane No 2, including short level between planes . .	0.75		355.	18641 40
	Along Pocono Valley	7.	40.	280.	21083 48
	Inclined Plane No. 3	0.34		150.	675 00
	Passes Stroudsburgh and Anatomak Mills	3.	35.	105.	7690 03
	Passing Industry Mills	2.80	25.	70.	8486 69
	Along the bank of the Delaware to Detotsburgh	0.69	Level		2610 51
	Total Eastern Division	37.48		1599.	171242 16

The *Western Division* extends from the River Lehigh to the western termination at Pittston.

No. of Grade.	Remarks.	Length of each grade in miles.	Descent in feet per mile.	Descent of each grade in feet.	Expense of forming the road bed of each gra
1.	From Lehigh to Western Slope . .	2.68	Level		$15999 86
2.	Descends the Valley of Roaring Brook .	7.50	26.	195.	20338 75
3.	Inclined Plane No. 1	0.68		234.5	2425 00
4.	Indications of Coal, Roaring Brook Deep Hollow	8.50	26.	221.	26080 00
5.	Inclined Plane No. 2, end of Moosick Mountain . . .	0.60		240.	3405 00
6.	Ditto Ditto .	2.85	26.	74.1	14220 20
7.	Inclined Plane No. 3, A. Slocum's Mills .	0.75		225.	3895 00
8.	Down Lackawanna to Pittston . . .	9.54	18.5	176.4	27611 33
	Total Western Division	33.10		1366.	$113975 14
	Sum for Eastern and Western Divisions .	70.58		2965.	$285217 30
	Add for engineering and unforeseen contingencies 10 per cent.				28521 73
	Aggregate cost of graduation				$313739 03
	Average per mile				4445 15

Next to be considered is SUPERSTRUCTURE. And, although stone blocks may conveniently be obtained for the support of wooden string pieces, upon the plan adopted by the Mohawk and Hudson Railroad Company—or, stone sills superceding entirely the use of wood, upon the plan adopted by the Baltimore and Ohio Company on part of their road, suitable stone abounding in the valleys of Roaring Brook and Broadhead's Creek; yet, for various reasons, timber should be preferred in the first construction.

1st. As matter of economy, costing $1500 to $3000 less per mile than the other plans.

2d. Should any unevenness occur in the road-bed in the line of the ways, to which a new road is very susceptible, it is much more easily adjusted.

3d. By the time the road-bed is properly settled and business requires a second track, the various plans now in progress of construction will be tested and the selection may then be dictated by actual experience, and

4th. Great economy and advantage will be derived from this, in delivering upon the spot the materials for a permanent superstructure.

The route passing through a district of country abounding with timber of various kinds, and of excellent quality, such as white oak, yellow pine, red beech, hemlock, &c. all of which can be obtained at a very low rate, therefore the estimate is predicated upon a construction entirely of wood, with wrought iron rail plates 2½ by ⅝ inch thick, and one turnout per mile of 300 feet in length.

COST OF ONE MILE.

10560	lineal feet Hemlock timber, at 3 cts. - - -	$330 00
14080	Do. Do. durable timber, 8 feet long for turns, at 3 cts. - - -	440 00
2640	cubic feet durable timber for string pieces at 12½ cts. -	330 00
3520	Locust wedges, at 1 ct. -	35 20
22	tons railplates, and transportation, $65. - - -	1430 00
½	ton spikes - - -	100 00
600	lbs. connecting plates, 10 cts.	60 00
	Labor putting down rails, drains, &c. - - -	960 00
300	feet turnout - - -	225 00
	Cost of one mile superstructure	$3910 20
	Average cost of one mile graduation	4445 15
	Average cost of railroad per mile	8355 35
	Cost of 70.58 miles - -	$589720 60

The location of the inclined planes being such as to render water available as the propelling power, a question arises as to its most judicious application, whether in the operation of machinery, or as a preponderating power upon a self-acting inclined plane.

Self-acting planes are at present only used where the preponderance of the descending trade is sufficient to draw up the ascending, but I see no reason why they cannot be used with equal advantage in an ascending, or fluctuating trade, where water, in sufficient quantities, can, at all times be commanded at their head.

The plan recommended by M. Robinson, Esq., Civil Engineer to the managers of Danville and Pottsville Railroad Company;

I would therefore recommend for your consideratien, as matter of economy, as well as preferable improvement, the construction of inclined planes upon the principle of those upon the east end of the Carbondale Railroad, with cars ustaining tanks or cisterns capable of containing water sufficient to preponderate any necessary ascending load, to be disgorged of their load at the foot, and return with the next ascending train.

Cost of seven inclined planes, at $5000 - - - -	$35000 00
Cost of grading and superstructure	589720 60
Aggregate cost of road	$624720 60

The capacity of a Railroad for the transaction of business, like that of a Canal, is measured by the facilities afforded in overcoming elevation.

Without troubling you with far-fetched theories upon this subject, I will refer you for example to the inclined planes upon the Carbondale Railroad; their ordinary progress upon the road, while making their transit, is at the rate of six miles per hour. From the favorable features of the ground on this route, for the location of the inclined planes, any angle of acclivity may be adopted that the nature of the case will justify; we shall assume therefore five degrees, as the angle best adapted to practical operations, hence, about half a mile will be the length of the planes on the Western Division, their acclivity being in the direction of the trade will regulate the business.

Assuming six miles per hour, according to the foregoing example, each transit will be performed in five minutes; allow for casual detentions 2½ minutes, will make 7½ minutes or 8 transits per hour. Assuming also 10 tons for the load, independent of the cars, is 80 tons per hour, and at 12 hours is 960 tons per day, and, making liberal allowance for all necessary delays, 250 days or 240,000 tons per year.

The experience upon railroads in this country does not yet furnish data whereby to calculate the expense of transportation; suppose then the tolls to be one cent per ton per mile, and the transportation one and a half cents per ton per mile, (which is about the expense on canals,) the amount for tolls on 70 miles is $168,000, and for transportation, including tolls, $420,000. This calculation may appear too large; suppose, then, that only half that business should offer, (which, from its location, there can be no doubt it shortly would,) the tolls would then be $84,000, and transporration, including tolls, $210,000.

A great inducement to this belief is, that more than 18 miles of the western end of this route is through a coal region, 6 miles of which is above inclined plane No. 2., along the valley of Roaring Brook, on the east side of Moosick Mountain, where indications of coal are of frequent occurrence.

The location of inclined plane No. 2, is at the south-western extremity of Moosick Mountain, from the head of which a line of road may be graded on the west side of the said mountain, declining 16 feet per mile, 13 miles to Carbondale, which, together with the extension of the Susquehanna, will make at least 27 miles, with which this vast coal field, embracing the valley of the Lackawanna, may be accommodated with a Railroad in a longitudinal direction, thus offering inducements to the individual enterprise of this district, by affording a cheap and expeditious communication to market, which may defy competition from any other quarter.

From the eastern termination of this route the road may be extended along the bank of the Delaware to Easton, which the Company is authorized by their charter to do, from whence a choice of markets is offered to Philadelphia by the Pennsylvania Canal, or to New-York by the Morris Canal; or, for a more direct communication to New-York, the Delaware may be crossed at the Water Gap, and a tolerably direct route may be obtained to the summit of the Morris Canal, or, a line may be extended up the valley of Paulinskill, on or near the line of the late contemplated Sussex and Orange Canal to, the Hudson, at or near Newburgh: on neither of the above routes will any stationary power be required.

But as it may be important for the Company so to extend their work as to maintain an entire uninterrupted communication to market during the winter season, I beg leave further to state that a very direct route may be obtained on which a Railroad can be constructed without encountering any formidable difficulties from the Delaware Water Gap, approaching the Hudson River opposite the City of New-York. Respectfully submitted,

Ephraim Beach, Civil Engineer.

December 31st, 1831.

Report of James Seymour, Esq., Engineer, upon the Route of a Railroad from the line of the Susquehanna and Delaware Railroad, at Lackawanna, to the State Line, near the Great Bend of the Susquehanna River.

To Samuel Calender, Abel Gritman, Wm. Finn, and others :

Gentlemen,—The examinations and surveys, made agreeably to your instructions, in the months of December, 1832, and January, 1833, will be given in the following manner, and known as the 1st, 2d, and 3d routes, by beginning with the first examined.

It will not, I presume, be necessary for me to enter into long and tedious details of cursory examinations, (as time and circumstances would not admit of a minute examination,) and only determine the general feasibility and practicability of the routes. Definite locations alone will enable an exact estimate to be made of the amount of labor necessary to effect the construction of a Railway. I shall, therefore, confine myself to a statement of the most prominent points of the routes, or of those which will affect them, either favorably or otherwise.

First Route.—The point at which this route commences is near John Decker's saw-mill, at a convenient place for crossing the Lackawanna Creek, about the centre of Blakely, Luzerne county, Pennsylvania, and will be designated Lackawanna, in the following statement :

It is situated about 8 miles S. W. from Carbondale, and 14 miles N. E. from the junction of the Lackawanna Creek with the Susquehanna River. Its level above tide water is 865 feet—197 feet above Centreville—and 180 feet below Carbondale. It varies a little from a direct line between Cobb's Gap, which bounds the Lackawanna Creek, easterly, and Calendar's, westerly; the gap through which the line of survey passes, at an elevation of 550 feet above Lackawanna, by a cut on the summit which will not exceed 40,000 cubic yards—a distance of 3 miles requiring two stationary powers in reaching the summit, which is the head of a tributary stream putting into the Lackawanna Creek, near Samuel Calendar's, also the head of a tributary stream putting into the main branch of the Tunkhannock, known as one of the south branches. Thence by keeping on the southerly side of said creek, a distance of 5 miles, descending 360 feet, requiring one stationary power for 260 feet, and the remaining 100 on a grade of 20 feet per mile, which brings the level about 40 feet above the bed of the creek, at which point it will be necessary to cross to the opposite side. Thence on the northerly side, a distance of 5 miles, by rising at the rate of 18 feet per mile, to near the level of the Bassett Pond. Thence on a level, passing Finn's Pond, (to a point from which it will be necessary to descend to the main branch of the Tunkhannock,) a distance of 3¾ miles. Thence to the main branch of the Tunkhannock, near the mouth of Martin's Creek, a descent of 420 feet, a distance of 1 mile, requiring two stationary powers in getting down sufficiently low for crossing Tunkhannock, making the distance 17¼ miles from Lackawanna to the mouth of Martin's Creek. The point where Martin's Creek empties into the main branch of the Tunkhannock, is about 12 miles N. E. from the Susquehanna River, (at the junction of the main branch with the Susquehanna.)

The line of survey from the Lackawanna to the mouth of Martin's Creek, will vary but a little from a direct line, as it may be seen by correct maps of the country that the stream itself, from its head, runs nearly in the same direction to the point proposed by this survey for crossing, and that the line diverging from the creek, soon after crossed by passing the Bassett and Finn Ponds to the mouth of Martin's Creek, as before described, is nearly direct. The face of the country is generally regular and uniform in the immediate vicinity of the line, (which is seldom found to be the case in this part of Pennsylvania.) Timber and stone are convenient throughout the line, and a railway may be constructed without encountering many difficulties, and comparatively at a small expense, as will be seen by the following estimate. Four viaducts will be necessary—one across the south branch of Tunkhannock—one across the Crooked and Mud Ponds' outlet, after their junction with each other—one across the main branch of Tunkhannock, and one across Martin's Creek, in order to follow up the west side of the last mentioned creek. The banks approach each other so nearly where the viaducts are required, that it will not require much labor, and consequently not much expense for construction.

Estimate.

17¼ miles of Railway, exclusive of engines, machinery, and viaducts, will cost, at $8,000 per mile, - -	$138,000
5 Stationary Engines, at $5,000 each,	25,000
4 Viaducts, at $1,000 each, - -	4,000
	$167,000
See Leggit's Gap Report from the mouth of Martin's Creek to the State Line, 29½ miles, - -	192,250
	$359,250
Extra for flange plates on curve lines,	2,000
	$361,250
Add 10 per cent. for contingent expenses, - - - - - -	36,125
Making in all, - - - - -	$397,375

It may be well here to remark, that the face of the country is such, that a different location may be made by a more expensive plan, and save 480 feet elevation and depression, together with one stationary power, by rising from Lackawanna 400 feet, to near Calendar's Summit, thence a cut for one quarter of a mile in distance, which will not exceed 50,000 yards; thence a tunnel for half a mile in distance, which will not exceed 8,000 yards; thence a cut on the opposite or westerly side of tha summit, which shall not exceed 50,000 yards, which will carry the line through; thence to the point for crossing the south branch of Tunkhannock, about 5 miles distance, on a grade of 30 feet per mile to a point 100 feet above the bed of the creek. At this elevation above the creek, the banks approach each other so nearly, that they will not, in distance, exceed 10 chains apart, at the level of the proposed line, and approach each other at the bed of the creek ; thence on a level to the point for descending to the main branch of the Tunkhannock, near the mouth of Martin's Creek, by crossing the outlet of Mud and Crooked Ponds, at the same point before proposed—the banks situated similar to those last described—also by lowering the Bassett Pond 30 feet—it being 45 feet above Finn's—will still leave the line of road 15 feet above the level of Finn's Pond; although this pond outlets into the south branch of the Tunkhannock, still it will not be necessary for the line of Railroad to rise from the level, 15 feet above said pond, in order to reach the height of ground between it and the main branch of the Tunkhannock, and remain upon fair ground for the construction of a Railway—thence to the main branch of the Tunkhannock, near the mouth of Martin's Creek.

With the last above proposed location, the line will be shortened one mile by crossing a ridge near Gorden White's, bounding the outlets of the Crooked and Mud Ponds west, which was necessary to go around, with the first proposed location, and may go around with the present, but the earth necessary to be removed will be wanted as embankment in crossing the outlet of said ponds, therefore it is preferable to take the course with the line, leaving the distance 16¼ miles from Lackawana to the mouth of Martin's Creek, and the locoation as follows: Rising from Lackawana 400 feet, requiring two stationary powers, thence on a grade of 30 feet per mile, to the point for crossing the south branch of Tunkhannock, thence on a level to a point necessary to descend to the main branch of Tunkhannock, near the mouth of Martin's Creek, thence to the main branch of Tunkhannock, a descent of 390 feet, requiring two stationary powers in getting down sufficiently low for crossing, in order to intersect the line of survey made up the Martin Creek, and thence to the States' line, a distance of 29½ miles, on a grade of 20 feet per mile, making the whole distance from Lackawana to the States' line, 46 miles.

Estimate.

First proposed location from Lackawana to the mouth of Martin's creek -		$167,000
Deduct for one stationary power - - -	$5,000	
Deduct 40,000 yards of excavation on summit, at 20 cents per yard -	8,000	
Deduct one mile for railway saved - - - -	8,000—	21,000
		146,600
Add for the cuts at Calendar's summit, 100,000 yards at 20 cents -		20,000
Tunnel, 8,000 yards, at $5 - -		40,000
Crossing south branch of Tunkhannock, extra - - - - - -		5,000
Crossing Mud and Crooked Ponds' outlet - - - - - - -		5,000
Draining the Bassett Pond - -		20,000
		236,000
See Legget's Gap Report from the mouth of Martin's creek to the States' line - - - - -		192,250
		428,250
Add 10 per cent. for contingent expenses - - - - - - -		44.625
Making in all - - - - -		472,875

Portsmouth and Roanoke Railroad.—Desirous of saying something respecting the progress of this work from personal observation, we availed ourselves of the invitation of one of the Directors on Wednesday afternoon, and proceeded with him along the line of the road as far as it has been opened, a distance of about four miles from Portsmouth. But little remains to complete the raising and graduating the road to that distance, and the work, as far as it is done, is *well* done, The hands have lately been taken from the high land to complete the road through the Gum Swamp, while the dry weather continues. Through this swamp the distance is a little over a mile, and on each side a mile and a half has been nearly finished. To persons unacquainted with the nature of swamp lands, it may appear a very laborious, tedious and expensive undertaking to get a solid foundation for a railroad, the idea over them prevailing that it is of the nature of a bog, and therefore requires to be piled in order to prevent it from settling or sinking; but this is a great mistake. It is true, that these lands are overflowed in wet seasons, and often remain so during the greater part of the year; but when the summer drought dries up the water, the earth soon becomes firm and tough, and the laborer finds it harder to excavate than the high land. Of course the great Dismal Swamp is an exception to this rule.

One of the greatest difficulties anticipated in this railroad, was that of the swamps which lie in its route, and which were supposed to require uncommon exertion and expense to render them passable; but it is a fact that the road can be made through them on a firmer foundation and at little if any more cost than that of the level high land.

It will be attempted, and it is confidently believed to be within the power of the company, to complete the whole line from Portsmouth to Suffolk, (sixteen miles,) by next Christmas. The operations at the upper end of the line have been prosecuted with much greater rapidity than at this: there, they have 150 hands employed—here, only half that number. Although as yet but little has been done, comparatively, (for the work has only been two or three months in progress,) there is enough to show to inspire confidence in the success of the undertaking, and in the judicious management of the Directors. Every advantage appears to be taken of circumstances: in crossing the head of Scott's Creek, we perceive the expense of piling for a foundation has been avoided, by building a culvert on a knoll of solid ground projecting into the marsh, and turning the drain through it; and temporary but substantial wooden bridges are thrown over the ravines, until the materials to build them of stone can be conveyed in the cars, which will expunge a very material item of expense. The level and almost unbroken face of the country, indeed, is peculiarly favorable to the rapid progress of the work, and to its execution upon the lowest possible terms; and its friends need entertain no fears about its success.—[Norfolk Herald.]

Railroad in Florida.—The Floridian of the 27th ultimo states, that a subscription has been started in Tallahassee and more than nine hundred Shares, at twenty dollars each, have already been taken, for the purpose of establishing a Railroad from Tallahassee, to some point on the St. Marks or Waukulla River. Three-fourths of the subscribers have said they would double the amount of their subscriptions, if necessary. Application will be made to the legislative council for a charter, at its next session, and to Congress for the necessary appropriation of land, &c. &c. Is it not time for Georgians to strain every nerve, if they do not wish to see one of the Old Thirteen outstripped in enterprise by the citizens of a Territory but lately acknowledged as a part of our domain.

Port Kent and Keeseville Railroad.—We learn that a survey and level of the contemplated route or routes has been made by J. N. M'Cumber, Esq., under the superintendance of Messrs. Watson and Keese; and that the distance by one route is 4¾ miles, with an average rise of forty feet to the mile: that by the high bridge the distance is 5¾ miles, making an average rise of thirty-one feet to a mile—without any obstruction by hills, and, as the surveyor reports, "Requiring little or no excavation the whole distance; and running through a sandy surface, and passing on the borders of an extensive cedar forest; and inexhaustible stone quarries lying above the surface, of the first quality."—[Argus.]

Railroad in Canada.—A charter has been granted by the Legislature of Lower Canada, for making a railroad from Montreal to St. John, on Lake Champlain.

Railroads.—The number and extent of new lines of railroad now in progress and in contemplation have caused a considerable rise in the price of iron. In addition to those now forming in England, very large orders have arrived from America. In one instance, near Wolverhampton, we have heard of an order to the amount of several thousand pounds for cast iron chairs alone.

A magnificent undertaking is in contemplation by the French government—the formation of a grand line of railway from Paris to Rouen, Havre, Lyons, and Marseilles. The government, with this intent, have already demanded a vote of £20,000 for the preliminary survey. This is part of a vote of £4,000,000 sterling just obtained for the completion of public edifices, monuments, canals, and roads.

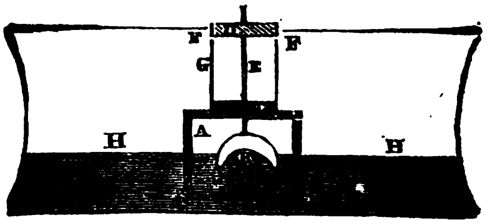
The heavy work of that great undertaking, the Newcastle and Carlisle Railway, on the line from Carlisle eastward, for about ten miles, is now in a state of considerable forwardness. The tremendous excavation at the Cawran hills is about half finished, and some idea may now be formed of the grand appearance which this portion of the road will present. The length of the cut is about 800 yards, the depth in many places at least 40, and consisting of 1,000,000 cubic yards of earth, sand, and stone.

Another heavy piece of work, three miles nearer Carlisle than the Cawran hills, is the viaduct of five arches, over Corbyneck Valley; it is now in a forward state, and is a handsome structure. Within 200 or 300 yards of this, is the stupendous viaduct over the river Eden, and the adjoining glen at Wetherall, to connect the lofty rocks on each side. This is a magnificent object: its entire length is 600 feet, and breadth 20 feet within the parapets; it has five arches of 80 feet span each. From Wetherall to within a mile and a half of Carlisle, the work is also in a state of forwardness. Nearer to Carlisle nothing of any consequence has been set about, with the exception of the bridge over the Petterel, near Maine's cotton works, which is now completed.—[London Repertory of Arts for July.]

Safety Apparatus for Steam Boilers. By F. H. [Communicated for the Mechanics' Magazine.]

Conceiving that there cannot be any invention more requisite than that of a safety apparatus for preventing the explosion of steam boilers, induced me most willingly to accept an invitation through a friend, to witness an experiment on a machine invented by Mr. Kennedy, of Fourth street, for that purpose, which, although tried on a small scale, evinced a capacity to embrace in the fullest sense a power to avert the awful calamity of the bursting of steam boilers. It is, on all hands, an admitted fact, that the cause of bursting or collapsing arises from a deficiency of water in the boiler; to ascertain the quantity, gauge cocks are used, which, at the most important time, are known to be uncertain, for, when the water is low, a quantity of it as condensed steam may yet remain in the cock, which, on opening, will cause a jet of water, that in too many cases satisfies the engineer. To obviate this, and to place the apparatus beyond the control of any person after it is fixed in the boiler, to simplify its formation and actions, and do away with the gauge cock, is evidently the object of the inventor, to which points he has certainly arrived, and which are fully demonstrable by the annexed engraving and reference.

Mr. Kennedy, agreeably to request, having communicated his plan to the Secretary of the United States Treasury, conceives that he has done his duty, and awaits the result. I have a different opinion, and, having obtained his permission, I wish through you useful magazine to lay a description of it before the public, with a desire to form a company which would put the apparatus into full operation, and probably save the lives and property of thousands.



This shows the interior of the boiler, also of the apparatus. A is a box containing the float. B the concave float, (concave at bottom and concave at top). C, soap-stone. D, a wadded stopper, connected by a rod, E, with the float, which, when lowered by the sinking of the float below the holes F, in the upper part of the tube, admits the steam to rush out, which will show the want of water in the boiler, agreeably to the adjustment between the float and stopper. G is a tube attached to the box A, and passes through the upper part of the boiler, in which the stopper acts, and at the top of which are four holes exactly opposite each other, through which the steam rushes when the water becomes low in the boiler.

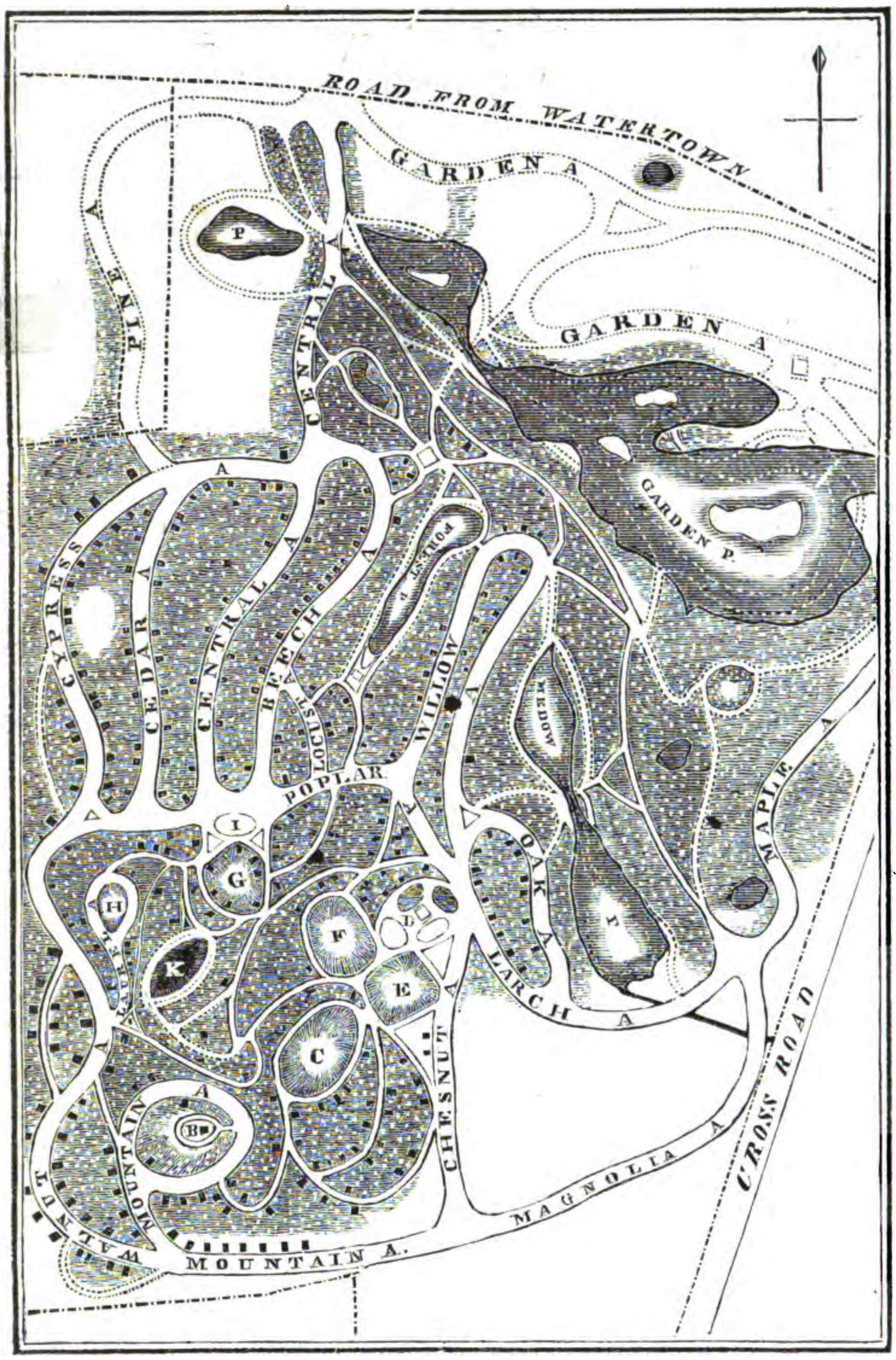
The reasons assigned by Mr. Kennedy for adopting this peculiar formation of the apparatus are,—first, in order to prevent ebulition affecting the float, he incloses it in a box, A, and admits water to it through the sides, not at top or bottom; second, it being well known that the gasses connected with steam will cause a firm adhesion of any metals which touch each other, and which are exposed to steam, he therefore substitutes soapstone for the guidance of the rod which connects the float and stopper: this being completely saturated with oil in the first instance, and kept so by a small additional supply through the stopper, along the rod E, insures a certain action. The holes at the top of the tube being directly opposite each other, neutralize the power of the steam, and prevent any partial pressure on the stopper. A concave float will retain rarified air or steam, which will promote its buoyancy, but which never can elevate it beyond the surface of the water.

This plan is evidently void of complexity, either in its working or formation, having but one simple operation; therefore, in every respect highly commendable. F. H.

Quick Travelling.—A gentleman left Boston on Friday morning at 5 o'clock, and arrived by stages, steamboats and rail-ways at the wharf in Baltimore, at 20 minutes before 2 on Sunday morning—making the journey in 44 hours and 40 minutes, from city to city—distance about 500 miles.

A singular case of a severe burn cured by the solution of the chloride of soda, is recorded in the London Lancet. An attorney, in attempting to put out the flames that had attacked the curtains of his bed, had got his hands burned, blistered but not broken. He sent for a couple of quarts of the lotion, (4 oz. of the solution to a pint of water) had it poured into soup plates, wrapped his hands in lint, as no skin was broken; and so kept them for some time. Next morning he was so perfectly well that only one small dried patch of burn remained; yet an hour and a half had elapsed before the application. The same solution has been equally effectual in scalds and bruises. It never fails almost immediately to heal a 'black eye.' When the chloride is used for scalds, it is necessary to use with it in the after applications some spermaceti ointment.

PLAN OF THE GROUNDS FORMING THE CEMETERY AT MOUNT AUBURN, NEAR BOSTON.



Mount Auburn Cemetery.—The following plan of the Mount Auburn Cemetery, together with the proceedings of the Boston Horticultural Society, are taken from the N. Y. Farmer and Am'n Gardener's Magazine; and we are sure that it will be read by none with greater interest than by those who read the **Mechanics' Magazine.** It can be read by no person who has a taste for eloquence, or who ever reflects upon the subject to which it refers—*the last resting-place of all mankind in this world*,—without producing a salutary influence upon his feelings, and possibly upon his future life.

Rural Cemetery.—In our last we alluded to the establishment of a rural cemetery in the immediate vicinity of Boston, and promised a more minute description of it in a subsequent number; we proceed, therefore, to redeem that promise, by giving the following account of the origin of the plan, together with the eloquent address of **Judge Story** at its consecration, and a plan of the grounds as laid out for cultivation.

Who that reads the following truly appropriate address will not join with us in urging our prominent citizens to step forward and give the weight of their influence to a similar measure? Why not the *New-York*, as well as the **Boston Horticultural Society**, adopt a similar measure, and thereby prevent its falling into the hands of speculators?

In the plan, the dotted lines show the **contemplated** paths and avenues, also the contraction of the ponds; and the square dots along the paths and avenues show the lots of 200 square feet purchased by individuals. The other references are as follow: A, Avenues; B, Mount Auburn; C, Harvard Hill; D, Temple Hill; E, Juniper Hill; F, Cedar Hill; G, Pine Hill; H, Laurel Hill; I, Central Square; K, Consecrated Dell; P, Ponds.

"Six or seven years ago meetings were held and measures taken, to carry into effect the plan of a private Rural Cemetery. But although there appeared to be no want of interest in the design, and of numbers sufficient to effect its execution, yet the scheme was suspended, from the difficulty of obtaining, at that time, a lot of land in all respects eligible for the purpose.

"After the establishment of the Massachusetts Horticultural Society, in 1829, it occurred to some of its members that a cemetery, of the character which had been desired, might with great propriety be instituted under the auspices of this new society, and that by a union of the interests of each institution, the success and permanency of their objects might be reciprocally promoted. Upon a notification, signed by Dr. J. Bigelow and John C. Gray, Esq. a meeting of gentlemen was held at the Exchange Coffee House, November 27, 1830, for the general consideration of the subject. At this meeting it was announced that a tract of ground, of about seventy acres, at the place then called Sweet Auburn, and owned by G. W. Brimmer, Esq. would be placed at the disposal of the society. A committee was appointed at a cotemporaneous meeting of the Horticultural Society, to consider the expediency of making this purchase, and to devise measures for forwarding the design of a Rural Cemetery and Experimental Garden. This committee afterwards obtained leave to fill their own vacancies, and to enlarge their number by the addition of persons not members of the Horticultural Society. A report in behalf of this committee was afterwards made by General H. A. S. Dearborn, President of the Society, and published in the newspapers, in which an extensive and able exposition was made of the advantages of the undertaking.

"At a meeting of persons favorably disposed towards the design, held at the Horticultural Rooms, June 8th, 1831, a strong and general wish was manifested for the immediate prosecution of the undertaking. A committee of twenty was chosen to consider and report upon a general plan of proceedings. The following gentlemen constituted this committee: Messrs. Joseph Story, Daniel Webster, Henry A. S. Dearborn, Samuel Appleton, Charles Lowell, Jacob Bigelow, Edward Everett, George Bond, George W. Brimmer, Abbot Lawrence, Jacob T. Austin, Franklin Dexter, Alexander H. Everett, Charles P. Curtis, Joseph P. Bradlee, John Pierpont, Zebedee Cook, jr. Charles Tappan, Lucius M. Sargeant, and George W. Pratt. This committee subsequently offered the following report, which was accepted, and made the basis of subscription for those who might become proprietors.

"The Committee of the Horticultural Society, to whom was referred the method of raising subscriptions for the Experimental Garden and Cemetery, beg leave to report:

"1. That it is expedient to purchase, for a Garden and Cemetery, a tract of land commonly known by the name of Sweet Auburn, near the road leading from Cambridge to Watertown, containing about seventy-two acres, for the sum of six thousand dollars; provided this sum can be raised in the manner proposed in the second article of this report.

"2. That a subscription be opened for lots of ground in the said tract, containing not less than two hundred square feet each, at the price of sixty dollars for each lot,—the subscription not to be binding until one hundred lots are subscribed for.

"3. That when a hundred or more lots are taken, the right of choice shall be disposed of at an auction, of which seasonable notice shall be given to the subscribers.

"4. That those subscribers who do not offer a premium for the right of choosing, shall have their lots assigned to them by lot.

"5. That the fee of the land shall be vested in the Massachusetts Horticultural Society, but that the use of the lots, agreeably to an act of the Legislature respecting the same, shall be secured to the subscribers, their heirs, and assigns, forever.

"6. That the land devoted to the purpose of a Cemetery shall contain not less than forty acres.

"7. That every subscriber, upon paying for his lot, shall become a member for life, of the Massachusetts Horticultural Society, without being subject to assessments.

"8. That a Garden and Cemetery Committee, of nine persons, shall be chosen annually, first by the subscribers, and afterwards by the Horticultural Society, whose duty it shall be to cause the necessary surveys and allotments to be made, to assign a suitable tract of land for the Garden of the Society, and to direct all matters appertaining to the regulation of the Garden and Cemetery; and five at least of this committee shall be persons having rights in the Cemetery.

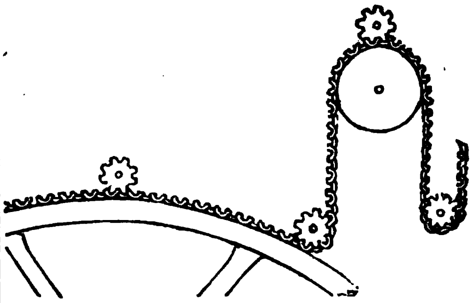
"The tract of land which has received the name of Mount Auburn, is situated on the southerly side of the main road leading from Cambridge to Watertown, and is partly within the limits of each of those towns. Its distance from Boston is about four miles. The place was formerly known by the name of Stone's Woods, the title to most of the land having remained in the family of Stone from an early period after the settlement of the country. Within a few years, the hill and part of the woodland were offered for sale, and were purchased by George W. Brimmer, Esq. whose object was to prevent the destruction of the trees, and to preserve so beautiful a spot for some public or appropriate use. The purchase which has now been made by the Horticultural Society includes between seventy and eighty acres, extending from the road nearly to the banks of Charles river. A portion of the lane situated next to the road, and now under cultivation, is intended to constitute the Experimental Garden of the Horticultural Society. A long water-course extending between this tract and the interior woodland forms a natural boundary, separating the two sections. The inner portion, which is set apart for the purposes of a Cemetery, is covered throughout most of its extent with a vigorous growth of forest trees, many of them of large size, and comprising an unusual variety of kinds. This tract is beautifully undulating in its surface, containing a number of bold eminences, steep acclivities, and deep shadowy vallies. A remarkable natural ridge with a level surface runs through the ground from south-east to north-west, and has for many years been known as a secluded and favorite walk. The principal eminence, called Mount Auburn in the plan, is one hundred and twenty-five feet above the level of Charles river, and commands from its summit one of the finest prospects which can be obtained in the environs of Boston. On one side is the city in full view, connected at its extremities with Charleston and Roxbury. The serpentine course of Charles river, with the cultivated hills and fields rising beyond it, and having the Blue Hills of Milton in the distance, occupies another portion of the landscape. The village of Cambridge, with the venerable edifices of Harvard University, are situated about a mile to the eastward. On the north, at a very small distance, Fresh Pond appears, a handsome sheet of water, finely diversified by its woody and irregular shores. Country seats and cottages, seen in various directions, and especially those on the elevated land at Watertown, add much to the picturesque effect of the scene. It is proposed to erect, on the summit of Mount Auburn, a tower, after some classic model, of sufficient height to rise above the tops of the surrounding trees. This will serve the double purpose of a landmark to identify the spot from a distance, and of an observatory, commanding an uninterrupted view of the country around it. From the foot of this monument will be seen in detail the features of the landscape, as they are successively presented through the different vistas which have been opened among the trees; while, from its summit, a magnificent and unbroken panorama, embracing one of the most delightful tracts in New-England, will be spread out beneath the eye. Not only the contiguous country, but the harbor and bay of Boston, with their ships and islands, and, in a clear atmosphere, the distant mountains of Wachusett, and probably even of Monadnock, will be comprehended within the range of vision.

"The grounds of the cemetery have been laid out with intersecting avenues, so as to render every part of the wood accessible. These avenues are curved and variously winding in their course, so as to be adapted to the natural inequalities of the surface. By this arrangement the greatest economy of the land is produced, combining at the same time the picturesque effect of landscape gardening. Over the more level portions the avenues are made twenty feet wide, and are suitable for carriage roads. The more broken and precipitous parts are approached by foot-paths, which are six feet in width. These passage-ways are to be smoothly gravelled, and planted on both sides with flowers and ornamental shrubs. Lots of ground, containing each three hundred square feet, are set off as family burial places, at suitable distances, on the sides of the avenues and paths. The perpetual right of inclosing and of using these lots, as places of sepulture, is conveyed to the purchasers of them by the Horticultural Society. It is confidently expected that many of the proprietors will, without delay, proceed to erect upon their lots such monuments and appropriate structures as will give to the place a part of the solemnity and beauty which it is destined ultimately to acquire.

"It has been voted to procure, or construct, a receiving tomb in Boston, and another at Mount Auburn, at which, if desired, funerals may terminate, and in which the remains of the deceased may be deposited until such time as the friends shall choose to direct their removal to the Cemetery; this period, however, not to exceed six months.

"The principal entrance to Mount Auburn will be through a lofty Egyptian gateway, which it is proposed to erect on the main road, at the commencement of the Central Avenue. Another entrance or gateway is provided on the cross road, at the eastern foot of the hill. Whenever the funds of the corporation shall justify the expense, it is proposed that a small Grecian or Gothic Temple shall be erected on a conspicuous eastern eminence, which in reference to this allotment has received the prospective name of Temple Hill.

"The recent purchase and disposition of the grounds at Mount Auburn has effected the consummation of the two designs, which, for a considerable time, have been cherished by numerous members of the community in the city of Boston and its vicinity. One of these is the institution of a garden for the promotion of Scientific Horticulture; the other, the establishment in the environs of the city of a retired and ornamented place of sepulture."



Gearing Chain.—An ingenious and useful construction of gearing chain for connecting cog-wheels, has lately been invented by Mr. Oldham, engineer, of the Bank of Ireland, which we think highly deserving of the attention of machinists, as it is so extensively applicable to various kinds of machinery, such as carding engines; and indeed in almost every situation where a series of toothed wheels are required to be driven by one mover. It consists of a peculiarly constructed chain, with curved links, which when passed round a drum will serve as teeth, and act as a cog-wheel to turn pinions, &c.; and when stretched out straight, or placed on a flat surface, will form an endless rack. It may also be passed over and under a series of rollers, pinions, &c., forming a carrying-chain, instead of the commonly constructed chains, in which spiked wheels are employed to take in the links.

In carding engines, and various other kinds of machinery, this improved chain will work with much better effect in connection with pinions, or wheels with common teeth, into which it is suited to gear, than the old chains, and without the possibility of slipping off, or riding over the points of spiked wheels, having a broader surface of contact; and it is not at all liable to get out of order, being much stronger than the old linked chain used with spur pinions.

It is formed by crescent-shaped plates constituting links, which are connected together; and one and two plates alternately, or two and three, or more, placed side by side; the alternate links fitting in between each other at the joints, where they are connected by pins, or bolts, passed through their eyes in lateral directions.

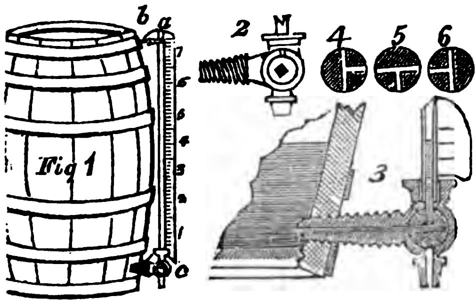
It will be obvious that these curved links present on one surface of the chain semicircular hollows like a rack, for the teeth of the pinions to take into, and that the ends of the links, where the bolts or rivets are passed through, are also formed semi-circular, and the same size as the spaces or hollows of the links. These ends constitute teeth on the chain, and take into the spaces between the teeth of the pinions or wheels, and consequently drive them; or the chain itself may be driven by such pinions or wheels in the same way as a rack.

It is evident that such a chain may be passed in various directions over wheels, on its face, and over drums at its back, and may be used with certainty of effect: as whatever motion is given to the chain will be communicated to all that is in gear with it.

The accompanying engraving shows such a chain, supposed to be endless, carried over part of the periphery of a carding cylinder, and constituting a circular rack or toothed rim, which drives all the pinions connected to it; the back of the chain is conducted over a roller, and brought into gear with other pinions or wheels; but as numerous illustrations might be produced of its applicability, it is unnecessary to say more, as its adaptation to every wide range of machinery will at once be perceived by every practical mechanic.—[British Cyclopædia.]

Hennekey's Gauge for Standing Casks. [From the London Mechanics' Magazine.]

We extract from the last part of the "Transactions of the Society of Arts" the following more particular description of the new mode of gauging casks introduced by Mr. Hennekey, of London. The invention is of such manifest utility, that it can scarcely fail to come into universal use; and has very deservedly obtained for the inventor the honor of the Society's silver Isis Medal.



"Fig. 1 is an elevation of a cask with the gauge applied to it. Fig. 2 is the cock *c* in fig. 1, on a large scale; it has three openings, one above, one below, and one in the side; by means of the screw in the latter opening, it is fixed firmly into the cask, as shown in the section, fig. 3. An upright wooden bar is then secured to the outside of the cask, having a groove *b* in it, corresponding with, and being, as it were, a continuation of the upper pipe of the cock *c*; in this groove is placed a glass tube, open at both ends, the lower part of which drops into the upper pipe of the cock, and is fixed there by means of white lead, or any other cement not acted on by spirit or by water; the tube is also secured above by a ring or cap. Parallel with the tube is a brass plate, on which the divisions are subsequently to be marked. The plug of the cock has three ways or openings, as shown in figs. 3, 4, 5, 6. A tongue or index projects from the plug, indicating the position of one of these ways; it may be seen in fig. 2—the position of which corresponds with that of the sectional view, fig. 3.

"The apparatus being complete as above described, the cock is turned to the position fig. 3, and the cask is filled by a hole at the top. It is evident, therefore, that the liquor will stand in the tubes at the same height it does in the cask, provided the tube is wide enough to avoid any sensible error from capillary attraction: this height is marked as the *b* or zero of the scale. The plug of the cock is then turned to the position fig. 6, and a given measure is drawn off, forming the unit of the scale. In the large standing casks, the quantity that is found practically the most convenient is five gallons. The plug is then returned to its former position, and the column of liquor in the tube will now be lower than the zero; the point at which it stands is to be marked on the scale as before. Proceeding in this manner to draw off successively five gallons at a time, the whole contents of the cask are thus transferred to the scale, each division of which represents five gallons, and the scale may be numbered upwards or downwards, as may be found the most convenient. The scale should not be continued to the bottom of the tube, but should terminate at the point where the dregs are usually found to begin. It is best not to leave a column of liquid constantly in the tube, as a deposit in that case takes place on the inside, which obscures it; when, therefore, any liquor has been drawn off, the plug of the cock should be brought to the position fig. 4, and previously to drawing off a fresh quantity, the plug should be brought to the position fig. 6.

"By the adoption of this method of graduation, the liquor dealer may take stock every day in a few minutes, by merely turning the plugs to the position fig. 3, and then reading the number corresponding with the height of liquor in the glass tube attached to each cask.

"Mr. Hennekey also finds these graduated casks to save much time and give greater precision, in making different liquids to form those compounds which are required by his customers. If, for example, he wants to mix together spirit and syrup in any given proportion, he puts the two liquors into separate casks on the ground floor, and places an empty cask, also graduated, on the platform above, and then pumps from the lower casks into the upper one the determined quantity of each ingredient; he then allows the mixture to remain for twenty-four hours, after which he reads off the quantity, and, by comparing this with the previously known quantity of the separate ingredients, ascertains how much has been lost in volume by condensation, and therefore how much additional price must be charged as an equivalent."

Hints for the Packing up of Machinery, and preserving it in working order. [From the London Mechanics' Magazine.]

Extract from a letter from James Watt, Esq., of Soho, to John Barrow, Esq., of the Admiralty, London:

"Before sending off the materials of engines, the bored or turned cast iron parts are all well greased, and the latter wrapped with rope-yarn, and the outside of the castings receive a coat of oil paint; the polished wrought iron work is well greased and packed in boxes with dry saw-dust. The precautions do not, however, prevent rust for any great length of time; this was experienced in the materials of his Majesty's steamer, the Alban, which we delivered at Deptford yard, in May or June, 1826; but the vessel not being ready, the boxes with the wrought iron goods were deposited in what appeared to be a dry storeroom, and, as far as I recollect, the saw-dust removed. On proceeding to erect the engines some six months afterwards, the wrought iron work was found to be much corroded by rust, and the repolishing and refitting was attended with considerable expense and loss of time. We find also that in our hands here, when similar materials are laid by for any length of time in the driest rooms we have, they require repolishing. This would be the case if the engines were erected, but we do not think the expense incurred in keeping the parts in order would be much increased;* indeed, I have adopted this plan myself in an iron work belonging to me, where I have had occasion to increase the power without the hope of letting it out in the present time. . . . . If the engines are not to be erected, the boxes should be immediately opened, the saw-dust removed, and all the wrought iron work well cleaned and fresh greased. It should be kept in a dry storehouse, and, if possible, in one occasionally heated; the cylinders, air pumps, &c. should also be cleaned out and fresh greased, and all the castings, as well as the boilers, should be put under sheds, to protect them from the wet, &c."

Family Steamer.—Scarcely ever (says the Nashville Banner) have we seen a little apparatus so admirably adapted, for its simplicity, its easy application, and its various and important uses, to the convenience and comfort of the neat and industrious housewife, as that which has recently fallen under our notice with the above appropriate title. It is a portable steam generator, whose principal object is to assist in creating and preserving cleanliness, to destroy noxious insects and vermin, and to prevent their increase. It is used without trouble or inconvenience, and supercedes the annoying application of water in many cases. That vexatious but indispensable ceremony, which is after all too often ineffectual, the cleaning of bedsteads, may be performed most thoroughly by the aid of this apparatus, without taking them apart or removing them, and without the slightest injury to the floor or carpet upon which they stand. Not a bug or other insect can possibly escape the searching and destructive power of this instrument. For cleansing furniture, removing spots from paint, purifying varnish, cleaning windows, and looking-glasses, picture frames, maps, &c. it is most completely adapted. Its penetrating power is truly wonderful. The smallest crack or fissure may be thoroughly searched, and every thing harbored there effectually removed. It may be useful, too, to destroy worms, which so often infest fruit trees, without injuring the trees themselves; and to remove skippers from bacon without affecting the meat. In fine, in those numerous essential family operations, which, while they contribute to neatness, health, and comfort, are so often full of trouble and vexation to the matron, and to all about her, it is an almost invaluable auxiliary, and when it shall be introduced into general use, we have no doubt it will rank among the most valuable and indispensible articles of housewifery. It is capable likewise of being employed in many cooking operations to great advantage. It will, for example, boil eggs or potatoes with great ease, and in a most excellent manner.

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* The meaning is here somewhat obscure; but we understand it to be, that the expense of keeping an engine in good working order, by having a person to attend to it, and working it occasionally, is not much more than the cost of repolishing and refitting.—Ed. M. M.

HYDRAULIC DRY DOCK.

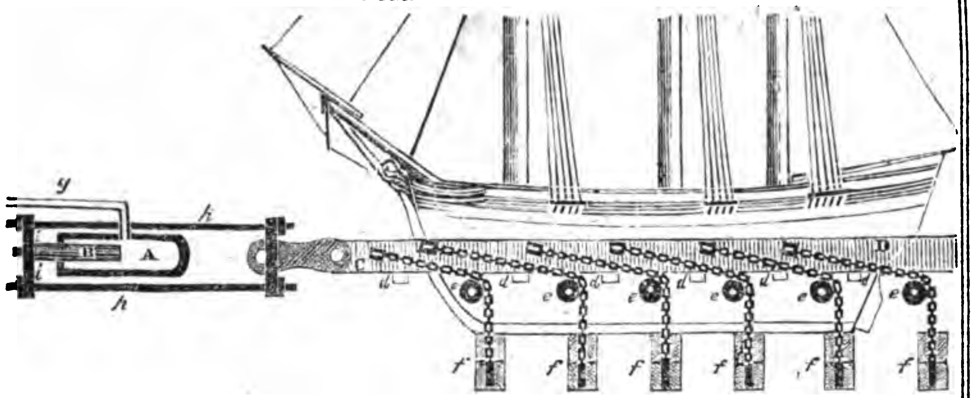
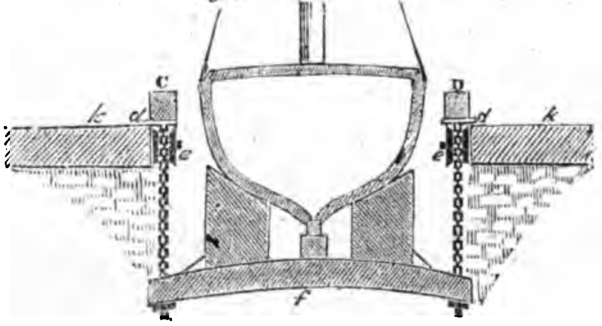


Fig. 2.



Hydraulic Dry Dock. [Communicated for the Mechanics' Magazine, and Register of Inventions and Improvements.]

Mr. Editor—Agreeably to your request, I visited the hydraulic dry dock of Messrs. Ring & Co., in this city, and was highly gratified and unutterably astonished at witnessing the gigantic power of a little machine called a hydraulic ram. A ship of 300 tons was raised in my presence, in the short space of an hour, together with the other heavy apparatus, high and dry, out of the water!

The hydraulic ram is nothing more than a hollow cylinder, equal in length to the immersed part of the vessel to be raised; it is provided with a stuffed collar, water-tight, thro' which passes a turned iron plug, called a ram; to one end of this ram is fixed a strong iron plate, connected to a corresponding one at some distance beyond the cylinder, by strong iron bars, and also connected with a sliding beam; to this beam a powerful set of chains are attached, passing over pulleys fixed to the wharf, and passing down into the water, where they are fastened to the timbers of the cradle, in which the ship is to be placed. As I have thus far only described one apparatus, it will be necessary to mention that there are two wharves, and two sets of apparatus, exactly alike—one of which I have given a longitudinal section of.

References.—A, the cylinder; B, the ram; C D, the sliding beam; *d*, stationary slats, on which the sliding beam moves; *e*, the pulleys; *f*, timbers of the cradle; *g*, the tube, which in this case is 80 feet long; *h*, bars connecting the two plates; *i i*, the two plates; *k k*, the wharves. Fig. 2 is a transverse section, with the references to correspond with the other.

The mode of raising a ship is as follows: She is brought in between the two wharves, exactly over the cradle—the chains are then tightened, so as to make the blocks come in contact with the keel—water is then forced into the cylinder, through a small tube, by means of a pump, which causes the ram to be forced out, drawing with it the sliding beams, raising the cradle with the ship, in a slow but majestic manner, to the required height. Respectfully, yours,

G. Lansing.

New-York, Aug. 8, 1833.

Incombustible Wash and Stucco White Wash.—The basis for both is lime, which must be first slacked with hot water, in a small tub or piggin, and covered, to keep in the steam; it then should be passed, in a fluid form, through a fine sieve, to obtain the flour of the lime. It must be put on with a painter's brush—two coats are best for outside work.

First. To make a fluid for the roof, and other parts of wooden houses, to render them incombustible, and coating for brick tile, stone work and rough cast, to render them impervious to the water, and give them a durable and handsome appearance.—The proportions in each receipt are five gallons. Slack your lime as before directed, say six quarts, into which put one quart of clean rock salt for each gallon of water, to be entirely dissolved by boiling, and skimmed clean; then add to the five gallons one pound of alum, half a pound of copperas, three-fourths of a pound of potash—the last to be gradually added; four quarts of fine sand or hard wood ashes must also be added; any coloring matter may be mixed in such quantity as to give it the requisite shade. It will look better than paint, and be as lasting as slate. It must be put on hot. Old shingles must be first cleaned with a stiff broom, when this may be applied. It will stop the small leaks, prevent moss from growing, render them incombustible, and last many years.

Second. To make a brilliant Stucco White Wash for the Buildings, inside and out.—Take clean lumps of well burnt stone lime; slack the same as before; add one-fourth of a pound of whiting or burnt alum pulverized, one pound of loaf or other sugar, three pints of rice flour made into a very thin and well boiled paste, starch, or jelly, and one pound clean glue, dissolved in the same manner as cabinet-makers do. This may be applied cold within doors, but warm outside. It will be more brilliant than plaister of paris, and retain its brilliancy for many years, say from fifty to one hundred. It is superior, nothing equal. The east end of the President's house in Washington is washed with it.

Process for Silvering Iron.—Iron is not easily silvered. The following process will be found convenient in its application to both large and small iron utensils.

After having scoured the piece of iron to be silvered, let it be very evenly rubbed with sand paper, and then dipped into a warm solution of sulphate of copper, (blue vitriol,) or of acetate of copper, (verdigris); when its surface has become red, immerse it in clean water. Should the copper not cover the surface equally, it must be again dipped into the solution. The solution of the salt of copper should not be so strong as to produce a precipitate of small particles of copper. Melt silver in a crucible, and let the iron be immersed in it, and rubbed over with a proper tool, so that the silver may adhere equally to its surface. This operation of immersing and rubbing is repeated until the silver is very evenly applied. Care should be taken to press, and not to rub, the surface, lest the thin coat of copper, which facilitates the adhesion of the silver, should be scraped off. When the silvering seems complete, the articles are removed from the crucible and polished.—[Journal des Connaissances Usuelles.]

Water Spout on the Lake of Geneva.—M. Mayor, who resides at Mollard Place, Geneva, in looking through his window, which faces the lake, saw, to his astonishment, on the third of December last, about a quarter before eight in the morning, in the direction of *Paquis* and *Secheron*, a vertical column of water, at least sixty or eighty feet high, and several feet in diameter, larger at its base than its summit, of a grey color, and appearing animated with a gyratory motion. The column rested on the lake below, and was bent towards the top in the form of a bow. It remained nearly two minutes without any sensible change of place; and then sunk, by degrees, from above, by diffusing itself in a shower of rain. At this juncture a south-west wind ruffled the surface of the lake; the sky was entirely covered with thick vapors, which occupied the upper regions, while there were, properly speaking, no clouds in the horizon.

This is not the first spout seen on Lake Leman. One which occurred in 1741 was described in the French Academy. It lasted several minutes. Another was seen in 1764, in the month of August, which continued nearly an hour.

In the spout witnessed by M. Mayor, the top of the column had no communication with thick clouds, as is sometimes the case, no trace of any such cloud was to be seen, neither above the column nor in its neighborhood,—hence there were no indications of electrical attraction to which the effect could be attributed, and there seems no means of accounting for the prodigious force then exerted to sustain a column of water of such height, except that which ascribes it to a current or whirlwind of excessive intensity.—[Bib. Univ. 1833.]

A Chain Saw has been invented by Mr. P. P. Quimby, of Belfast, Me. The teeth are rivetted together, and the saw is placed round a cylinder in a groove.

NEW-YORK AMERICAN.

AUGUST 10, 12, 13, 14, 15, 16—1833.

LITERARY NOTICES.

THE PHILOSOPHY OF THE MORAL FEELINGS, by JOHN ABERCROMBIE, M. D. being Vol. LVIII of *Harpers' Family Library: N. Y.*—The former work of Dr. Abercrombie, on the Intellectual Powers of Man and the Investigation of Truth, which was published some time ago, as No. XXXVII of this same series, will ensure a welcome to his new treatise on a cognate branch of mental philosophy. There is no profession which, in our judgment, affords so good and so frequent opportunities of thoroughy studying the phenomena of our intellectual and moral existence, as that of a physician. While ministering to the bodily ailments which are more or less the lot of all, he has not less to consider and consult the state of the mind and feelings, which react so powerfully upon the material frame with which they are allied, and through which they act and suffer. He sees the human being—animal in so many of his propensities and wants—godlike in his longings after immortality, and in the reach of his lofty intellect—stript of all disguise, and acting naturally. If then he have an observing spirit—previous cultivation and acquirement—and withal a turn for metaphysics—the physician in the sick room has advantages for verifying the many and conflicting hypotheses respecting the intellectual functions—superior to all others. We think Dr. Abercrombie has profited by these advantages, and that in this, the sequel in some sort to his former work, he traces with a steady hand and good discrimination—and withal in a practical manner—"the principles which ought to regulate our volitions, and our conduct, as moral and responsible beings." A more important subject, or one of greater interest to each and all of us, can hardly be discussed. We propose by some extracts to show how it is here disposed of.

After laying down the position that the "sense of justice is a primary and essential part of our moral constitution, conveying the distinct impression of certain conduct which a man owes to his fellow men without regard to any considerations of a personal nature, and apart from all enactments or laws, divine or human," the author thus proceeds to define this "sense of justice," and illustrate its operation.

The sense of justice consists in a feeling experienced by every man, of a certain line of conduct which he owes to other men in given circumstances; and this seems to be referable to the following heads;—attending to their interest,—not interfering with their freedom of action,—preserving their reputation,—estimating their character and motives,—judging of their opinions,—consulting their feelings—and preserving or improving their moral condition. As a guide for his conduct in particular instances, a man has usually a distinct impression of what he thinks due by other men towards himself; justice requires that he rightly extend to others the same feelings and conduct which, in similar circumstances, he expects from them.

(1.) Justice is due to the persons, property, and interests of others. This constitutes Integrity or Honesty. It, of course, implies abstaining from every kind of injury, and preserving a conscientious regard to their rights. In this last respect, it allows us to exercise a prudent attention to our own interest, provided the means be fair and honourable, and that we carefully abstain from injuring others by the measures we employ for this purpose. The great rule for our guidance in all such cases is found in the immutable principles of moral rectitude; the test of our conduct in regard to individual instances is, that it be such as, were our own interest concerned, we should think fair and honorable in other men.

(2.) Justice requires us not to interfere with the freedom of action of others. This constitutes personal liberty; but in all civil communities the right is liable to certain restrictions: as when a man uses his freedom of action to the danger or injury of other men. The principles of justice may also recognize a man's surrendering, to a certain extent, his personal liberty, by mutual and voluntary compact, as in the case of servants, apprentices, soldiers, &c.; but they are opposed to slavery, in which the individual concerned is not a party to the agreement.

(3.) Justice enjoins a regard to the reputation of others. This consists in avoiding every thing that could be injurious to their good name, either by direct evil-speaking, or such insinuations as might give rise to suspicion or prejudice against them. It must extend also to the countenancing of such insinuations when we hear them made by others, especially in circumstances in which the individual injured has no opportunity of defending himself. It includes, further, that we do not deny to others, even to rivals, any praise or credit which is justly due to them.—There is, however, one modification, equally consistent with justice, to which the former of these rules is liable; namely, that in certain cases, we may be required to make a statement prejudicial to an individual, when duty to a third party or to the public makes it incumbent on us to do so. In such a case, a person guided by the rules of justice will go no farther than is actually required by the circumstances; and will at all times beware of propagating a report injurious to another, though he should know it to be strictly true, unless he is called upon by special duty to communicate it.

(4.) Justice requires us not only to avoid injuring an individual in the estimation of other men, but to exercise the same fairness in forming our own opinion of his character, without being misled or biassed by passion or prejudice. This consists in estimating his conduct and motives with calmness and impartiality; in regard to particular instances, making full allowance for the circumstances in which he was placed, and the feelings by which he was, or might be, at the time, naturally influenced. When an action admits of being referred to different motives, justice consists in taking the more favorable view, if we can do so with strict regard to truth, instead of harshly and hastily assigning a motive which is unworthy. Such justice in regard to character and motives we require to exrecise with peculiar care, when the conduct referred to has been in any way opposed to our own self-love. In these cases we must be especially on our guard against the influence of the selfish principle, which might lead to partial and distorted views of actions and motives, less favorable to others, and more favorable to ourselves, than justice warrants. When viewed in this manner, we may often perceive, that conduct which gave rise to emotions of displeasure, as injurious to us, was fully warranted by some conduct on our own part, or was required be some high duty which the individual owed to another.

(5.) Justice is to be exercised in judging of the opinions and statements of others. This constitutes Candor. It consists in giving a fair and deliberate hearing to their opinions, statements, and arguments, and weighing fairly and honestly their tendency. It is, therefore, opposed to prejudice, blind attachment to preconceived opinions, and that narrow disputatious spirit which delights in captious criticism, and will hear nothing with calmness that is opposed to its own views; which distorts or misrepresents the sentiments of its opponents, ascribing them to unworthy motives, or deducing from them conclusions which they do not warrant. Candor, accordingly, may be considered as a compound of justice and the love of truth. It leads us to give due attention to the opinions and statements of others,—in all cases to be chiefly solicitous to discover truth, and in statements of a mixed character, containing perhaps much error and fallacy, anxiously to discover and separate what is true. It has accordingly been remarked, that a turn for acute disputation, and minute and rigid criticism, is often the characteristic of a contracted and prejudiced mind; and that the most enlarged understandings are always the most indulgent to the statements of others,—their leading object being to discover truth.

(6.) Justice is due to the feelings of others; and this applies to many circumstances which do not affect either their interest or their reputation. Without injuring them in any of these respects, or in our own good opinion, we may behave to them in such a manner as to wound their feelings. There are minds of an extreme delicacy, which, in this respect, are peculiarly sensitive; towards such, a person of correct feelings strives to conduct himself with suitable tenderness. We may find, however, persons of honest and upright minds, who would shrink from the least approach to real injury, but yet neglect the necessary attention to the feelings; and may even confer a real benefit in such a manner as to wound the individual to whom they intended kindness. The lower degrees of this principle pertain to what is called mere good-breeding, which has been defined "benevolence in trifles;" but the higher degrees may restrain from conduct which, without any real injury, inflicts permanent pain. To this head we may perhaps also refer a due regard to the estimate which we lead a man to form of himself. This is opposed to flattery on the one hand, and on the other to any unnecessary depreciation of his character. Flattery indeed is also to be considered as a violation of veracity.

How much is there in the above extract for useful meditation!

Self-love is, according to *La Rochefoucauld*, the one unfailing principle of human actions—even to the extent, as one of his maxims alleges, of enabling us to derive some gratification from the calamities of our best friends. We give Dr. Abercrombie's just and clear chapter upon this subject:

SELF-LOVE.—There has been some dispute respecting the term Self-love, both as to its general propriety, and as to the mental feelings which ought to be referred to it. There can be no doubt that there is, in our constitution, a principle or propensity which leads us to study our own interest, gratification, and comfort; and that in many instances. it becomes the ruling principle of the character. It is in this sense that I use the term self-love, without entering into any discussion regarding the strict logical propriety of it. Like the other mental feelings, it is to be considered as part of our moral constitution, and calculated to answer important purposes, provided it be kept in its proper place, and do not encroach upon the duties and affections which we owe to other men. When thus regulated, it constitutes prudence, or a just regard to our own interest, safety, and happiness; when it becomes morbid in its exercise, it degenerates into selfishness.

A sound and rational self-love ought to lead us to seek our own true happiness, and should prove a check upon those appetites and passions which interfere with this; for many of them, it must be allowed. may not be less adverse to our own real interest and comfort than they are to our duty to other men. It should lead us, therefore, to avoid every thing, not only that is opposed to our interest, but that is calculated to impair our peace of mind, and that harmony of the moral feelings without which there can be no real happiness. This includes a due regulation of the desires, and a due exercise of the affections, as a moral condition which promotes our own happiness and comfort. Self-love, viewed in this manner, appears to be placed as a regulating principle among the other powers,—much inferior indeed to the great principle of conscience, so far as regards the moral condition of the individual,—but calculated to answer important purposes in promoting the harmonies of society. The impression on which its influence rests appears to be simply the comfort and satisfaction which arises to ourselves from a certain regulation of the desires, and a certain exercise of the affections, and the feelings of an opposite kind which follow a different conduct. These sources of satisfaction are manifold. We may reckon among them the pleasure attached to the exercise of the affections themselves, a feature of our moral constitution of the most interesting kind, the true mental peace and enjoyment which spring from benevolence, friendship, meekness, forgiveness, and the whole train of the kindly feelings,—the gratitude of those who have experienced the effects of our kindness,—the respect and approbation of those whose esteem we feel to be valuable,—and the return of similar affections and good offices from other men. On the other hand, we have to keep in mind the mental agony and distraction which arises from jealousy, envy, hatred, and resentment,—the sense of shame and disgrace which follow a certain line of conduct,—and the distress which often arises purely from the contempt and disapprobation of our fellow-men. "Disgrace," says Butler, "is as much avoided as bodily pain,"—we may safely say that it is much more avoided, and that it inflicts a suffering of a much more severe and permanent nature. It must likewise accord with the observation of every one, that among the circumstances which most frequently injure our peace and impair our comfort, are those which ruffle the mind by mortifying our self-love. There is also a feeling of dissatisfaction and self-reproach which follows any neglect of a due exercise of the affections, and which, in a well-regulated mind, disturbs the mental tranquillity fully as much as the disapprobation of other men. It is further evident, that the man of ungoverned passions and ill-regulated affections impairs his own peace and happiness as much as he violates his duties to others,—for his course of life is productive, not only of degradation in the eyes of his fellow-men, but often of mental anguish, misery, disease, and premature death. To run the risk of such consequences for the gratification of a present appetite or passion, is clearly opposed to the dictates of a sound self-love, as has been distinctly shown by Bishop Butler; and when, in such a case, self-love prevails over an appetite or passion, we perceive it operating as a regulating principle in the moral system. It does so, indeed, merely by the impression, that a certain regulation of the moral feelings is conducive to our own true and present happiness; and this shows a wonderful power of compensation among these feelings, referable entirely to this source. But it is quite distinct from the great principle of conscience, which directs us to a certain line of conduct on the pure and high principle of moral duty, apart from all considerations of a personal nature—which leads a man to act upon nobler motives than those which result from the most refined self-love, and calls for the mortification of all personal feelings, when these interfere in the smallest degree with requirements of duty. This distinction I conceive to be of the utmost practical importance . as it shows a principle of regulation among the moral feelings themselves, by which a certain exercise of the affections is carried on in a manner which contributes in a high degree to the harmonies of society, but which does not convey any impression of moral approbation or merit that can be applied to the agent,

Self-love, then, leads us to consult our own feelings, and to seek directly our own interest and happiness. The affections lead us to allow for the feelings; and consider the advantage and comfort of other men; and a certain balance between these principles is essential to the healthy state of the moral being.—It is seldom that the affections are like to acquire an undue influence. but there is great danger of self-love degenerating into selfishness, which interferes with the duties we owe to others. We have formerly alluded to the means, referable to the due exercise of the affections, and even to a sound and rational self-love, by which this should be in part prevented.—When these are not sufficient, the appeal is to conscience; or a distinct reference of individual cases is made to the great principle of moral rectitude.—We find, accordingly, this principle called into action when a man has become sensible of important defects in his moral habits. Thus, we may see a man, who has long given way to a peevish or irascible disposition, that is, to selfish acting upon his own feelings, without due regard to the feelings of others, setting himself to contend with this propensity upon the score of moral duty; while another, of a placid disposition, has no need of bringing the principle into action for such a purpose. In the same manner, a person who has indulged a cold contracted selfishness may, under the influence of the same great principle, perform deeds of benevolence and kindness. Thus we perceive that the moral principle or sense of duty, when it is made the regulating motive of action, is calculated to control self-love, and preserve the proper harmony between it and the exercise of the affections.

When the principle of self-love becomes deranged in its exercise and objects, it leads to those habits by which a man seeks his own gratification in a way which interferes with his duties to other men. This he may do by an undue pursuit of any of the desires —whether avarice, ambition, love of eminence, or love of fame; and the desire of knowledge itself may be so indulged as to assume the same character. Even deeds of benevolence and kindness may be performed on this principle,—as when a man, by such actions, seeks only the applause of the public, or the approbation of certain individuals, from whom, it may be, he expects to derive advantage. Hence the value we attach, in the exercise of all the affections, to what we call disinterested conduct,—to him who does good by stealth, or who performs acts of exalted justice, generosity, or forbearance, under circumstances which exclude every idea of a selfish motive,—or when self-interest and personal feeling are strongly and obviously opposed to them. Such conduct commands the cordial approbation of all classes of men; and it is striking to remark how, in the highest conception of such a character that fancy can delineate, we are met by the sublime morality of the sacred writings, impressed upon us by the purest of all motives, the imitation of him who is the Giver of all good; "love your enemies,—bless them that curse you;—do good to them that hate you,—and pray for them which despitefully use you and persecute you; that ye may be the children of your Father which is in heaven; for he maketh his sun to rise on the evil and on the good, and sendeth rain on the just and on the unjust." "If any man will be my disciple," says the same great Author of Christianity, "let him deny himself."

A New Theory of Terrestrial Magnetism, *read before the New York Lyceum of Natural History, by* Samuel B. Metcalfe, M. D. New York: G. & C. & H. Carvill.—The polarity of the needle is the civilizer of mankind. Without it this western world would yet have been an unknown region; and commerce—the handmaid of religion, of science, and of all that humanizes and embellishes life—instead of covering every sea, and visiting every shore, would still be timidly creeping along the coasts which bound the great Ocean, dreaming never of launching forth into the world of trackless waters. Yet though all admit this truth, and use has reconciled us to unquestioning confidence in a guide so apparently insignificant as a thin wire of magnetized steel, no one has yet resolved the philosophy of this wonderful phenomenon. A young American physician has, in the treatise before us, attempted this solution—with what success we are unequal to pronounce; but that he has brought to the discussion much force of reasoning, many striking analogies, and fortunate illustrations, we are quite sure.

The essay is divided into two parts. In the first part some striking analogies between electricity and caloric are traced, whence it is assumed that they 'are radically the same subtle, imponderable and all pervading elements;" and especially are capillary and cohesive attraction explained by reason of "an unequal distribution of caloric, and of its attraction for ponderable matter." In the second part the connection "between caloric and terrestrial magnetism" is sought to be established; and we are sure that the process of the reasoning and the facts stated in its support will be read with general satisfaction. We cannot do better to show the spirit, as well as the talent with which Dr. Metcalfe writes, than to give an extract from the conclusion of Part I of the essay:

141. The truth is, that we live, move, and breathe constantly, in an atmosphere of unseen, but living fire. It is that which gives beauty and lustre to the blue empyrean dome—which dissolves and suspends the waters of the ocean on high—and which lets them fall in "fruitful showers to cheer the plains below." It is the active spirit of the storm and tempest—while it clothes the fields with living green, and causes all nature to rejoice.

142. Whoever unfolds aright, the grandeur and harmony of these manifestations of Infinite Wisdom, may be said, in the language of the eloquent Galen, "to chaunt a solemn hymn of lofty adoration to the Author of the universe."

143. Observations were made with the microscope some years ago in France, which led some philosophers to adopt the ancient doctrine, that all the elementary atoms of matter were alive—that they were composed each of separate, moving animalcules,—In short, that all nature was alive. Now there can be no doubt that the atoms of all matter are more or less in perpetual motion, caused by the transitions of caloric from one portion, to another. These chemical motions were probably mistaken for animalcular movements.

144. It is self evident that oxygen which supports combustion by giving out caloric, is also the supporter of animal life. When the oxygen of the atmosphere is inspired, it is charged with caloric positively—when expired, in combination with carbon, it is negative; having imparted a portion of its caloric to the blood. The same thing is true in every case of oxidation or combustion, respiration of plants, &c. This is a law of vast importance, and explains almost every chemical combination which takes place throughout matter.

145. How is it that carbonic acid gas, when inhaled, destroys animal life? Is it owing to the insufficient supply of caloric it affords? It cannot be by a poisonous operation, because it is formed continually in the lungs, and is therefore in perpetual contact with them. It must be owing to the fact of its having lost that portion of latent caloric, which is necessary to vital action.

146. We have endeavored to prove that caloric is the cause of capillary and cohesive attraction—that its existing in different states in different elements, is the cause of chemical attraction, and that its unequal distribution in different bodies, causes an attraction between distant as well as proximate masses.

147. To say that it is the bond of union between the heavenly bodies, might be considered too bold a stretch of generalization. It must be acknowledged, however, that the sun is one million times larger than the earth. If, then, the sun contains one million times as much caloric as the earth, he must be *positive* in relation to all the planets and comets—while they are negative in relation to him. Sir Isaac Newton maintained, that there must be some connecting medium between the celestial bodies by which they are retained in their orbits, which he called "ether," and which he supposed was more subtle than light. Does not caloric answer to this subtle medium?* Does it not extend from the centre, to the circumference of the universe? Is it not the cause of all the motions and transmutations of terrestrial matter?—of decomposition and recombination—of secretion, nutrition, growth, &c.? Is it not the semperviving energy of universal nature?

148. If the facts and principles which we have thus endeavored to unfold, be founded in truth, we can perceive no limits to their application. They are intimately connected with all the phenomena of living and dead matter, and therefore with every department of human knowledge. The philosophy of chemical affinity is still in its infancy, and presents a far more extensive field for discovery, than has ever yet been explored. He who enters upon it with enlarged views, and cultivates it with unwearied application, will greatly extend the boundaries of science, and will derive from his labors more imperishable renown, than that of the conqueror who wades to the diadem, through the blood and tears of suffering humanity. To control the operations of nature, and render her elements subservient to the happiness of millions, is the most noble prerogative of enlightened and philanthropic man; and raises him to communion with the ever blessed SPIRIT OF ETERNAL TRUTH, to whom be ascribed all glory and dominion, for ever.

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* If we suppose caloric to be the cause of gravity, we must also suppose that it is itself without gravity—otherwise we shall only explain the phenomena of gravity by itself, which would be absurd.

An Elementary Treatise on Mechanics, *translated from the French of* M. Boucharlat, *with additions and emendations, designed to adapt it to the use of the Cadets of the United States Military Academy; by* Edward H. Courtenay, *Professor of Natural and Experimental Philosophy in the Academy.* New York: *J. & J. Harper.* 1 vol. pp. 432.—The title of this work is explanatory of its objects; and the name of the eminent Professor who has translated and adapted it to the use of scientific students in this country, affords an ample pledge that it is a work good in itself, and that all he has done for it has been well done. It is however a treatise only for those whose previous mathematical studies will enable them to follow out the most useful application of high mathematics. The work is very well printed by the Harpers.

Military Memoirs *of Field Marshal* the Duke of Wellington, *by Capt.* Moyle Sherer. 2 vols. *Philadelphia*: Carey & Lea.—"The Conqueror of Napoleon," as since the battle of Waterloo it has been the pride of England to designate the Duke of Wellington, has not lacked historians of his deeds of arms; though heretofore they have been celebrated in the general history of the wars in which he was engaged. The volumes before us relate more directly and solely to himself, and as personal memoirs enter of course largely into detail. The author entertains manifestly the profoundest admiration for his hero, and speaks of his military character as "unrivalled." Success sometimes makes great men of those whom nature hardly designed for such, and always blinds the judgment to faults. The closing scene in Lord Wellington's military career was so striking, and the results for Europe and the world of the victory of Waterloo were indeed so important, that it gave a crowning glory to the conqueror, which battles demanding and evincing much more of skill and science in the Commander have failed to impart. Without then sharing the unlimited admiration of the writer for the military career of the

Duke, we may nevertheless say that the perusal of these volumes is fitted to impress every one with the conviction that, though not "unrivalled," the military career of Wellington denotes throughout, the possession in an eminent degree of the peculiar talents of a great commander. The style of the writer is attractive; his opinions, for an Englishman, impartial; and his sources of information apparently copious and accurate.

The extract we subjoin relates to the death of *Sir John Moore*, at *Corunna*—a death which the beautiful lines of Wolfe have made known to thousands who never heard of the battle, and which is well commemorated by Capt. Sherer.

Marshal Soult had 20,000 men under arms. From the lighter guns along his front, and from a battery of heavy calibre on his left, he opened a smart cannonade, and under cover of the fire moved down in three weighty columns to the attack. The first of these, throwing out its voltigeurs, and driving in the pickets, attacked the British right, assailing the front and flank of general Baird's division. The second column marched upon the British centre. The third, with less of earnest intention in the character of its attack, moved upon the British left, where the troops were commanded by Sir John Hope.

The horse of the commander-in-chief stood saddled for him, to visit the outposts, just as the alarm was given. He rode thankful to the field. The thunder of the guns and the rolling of the musketry was already begun as he galloped to the summons with a grave joy.

The battle was most furious near the village of Elvina, on the British right. In this quarter of the field Sir David Baird was severely wounded; and here, while earnestly watching the progress of the stern combat in Elvina, Sir John Moore himself was struck upon the left breast by a cannon-shot: it threw him from his horse; but, though the laceration was dreadful, it did not deprive him of his mental energy; he sat upon the ground, and watched the battle.—His eye was steadfast and intent, and it brightened as he saw that all went bravely and well. The soldiers now put him in a blanket to carry him to the rear; as they did so, the hilt of his sword struck upon his wound, and caused him a sudden pang. Captain Hardinge would have taken off the sword, but the general stopped him, saying, "It is as well as it is: I had rather it should go out of the field with me!" With these words he was borne from the battle. It was a long way to the town, and the torture of the motion was great; but the expression of his countenance was calm and resolute, and he did not sigh. Several times he made his attendants stop, and turn him round, that he might gaze upon the field of battle.

After he was laid down upon a couch in his lodgings, the pain of his wound increased. He spoke with difficulty, and at intervals. He often asked how the battle went; and being at last told that the enemy were defeated, he said instantly, "It is a great satisfaction to me to know that we have beaten the French." He was firm and composed to the last; once only, when speaking of his mother, he betrayed great emotion. "You know," said he to his old friend Colonel Anderson, "that I always wished to die this way!" The bitter agony of spirit which he had long endured was thus mournfully evidenced. "I hope," he exclaimed, "the people of England will be satisfied! I hope my country will do me justice!" These precious sentences were among the last he uttered; his sufferings were not long; he expired with the hand of Colonel Anderson pressed firmly in his own.

We shall not further describe the action than by saying, that when darkness put an end to the work of battle, not only had the French been repulsed at all points, but the line of the English was considerably advanced beyond the original position. The loss of the French was, by their own admission, 3000; that of the British was about 800 killed and wounded.

The brigade of General Hill and that of General Beresford remained on shore the 17th, to cover the embarkation of the army, which began soon after the close of the engagement. By night the victorious troops filed down from the field of battle to their boats, and embarked. There was a moon, but it gave only a wan and feeble light; for the weather was misty and chill. Soon after nightfall, the remains of Sir John Moore were quietly interred in the citadel of Corunna. Soldiers dug a grave; soldiers laid him in the earth. He was buried in his military cloak, and was left asleep, and alone, upon a bastion—a bed of honor well chosen for a hero's resting-place. This last duty done, the officers of his personal staff went on shipboard, "in soldiers' sadness, the silent mourning of men who know no tears."

Sir John Moore had signalized his name in the West Indies, in Holland, and in Egypt. His life was spent among the troops; among the troops he died; and, to this hour, it is a distinction to any officer to have learned his duty under the eye and the voice of Moore. We admire his character; we glory in his warrior-like death; we consider his fame hallowed by his end;—but we think that, with the deep knowledge of human nature he possessed, the state of Spanish society, under the actual circumstances of peril and bewilderment, ought not to have surprized him, far les to have irritated him to the extent to which it certainly did. That time was lost at Salamanca, is a matter of fact, and a subject of regret. The value of a day, or of an hour, in war, is great. It is vain to ask what might have been the consequences of a movement into the heart of Spain, which was never made, and which, according to able and acute men, never should have been contemplated; but it is certain that between that measure and a retreat of Portugal, Sir John Moore wavered long in his decisions. War, we are told, and truly, by all good officers, is a science; and we are shown how accurate and profound are, and ought to be, the calculations of a commander; yet, "nothing venture, nothing have," has passed into a proverb with mankind.

In all undertakings, we must leave something in a state too incomplete to command the certainly of success. We must exercise our trust in Providence, whatever be our aim and end: for "the lot is cast into the lap, the whole disposing thereof is of the Lord;" and undoubtedly, with a righteous cause, we may look hopefully for help. We are not of the number of those who dare to speak lightly of the spirit of Moore; for we know the help of Heaven was that to which he looked; and we believe that it was an act of conscientious self-denial, which made him hesitate to risk the lives of so many thousands on the desperate hazards of a chivalric effort.

FOREIGN INTELLIGENCE.

In France the ministers have a breathing spell, the Chambers having been prorogued on the 26th, immediately after the passing of the budget, which was done in considerable haste by the Peers. The mode of this prorogation was summary enough—no speech from the King in person, or by commission, but at a given hour M. d'Argout entered the Chamber of Deputies, accompanied by three of his colleagues, and proceeded forthwith to read a royal ordonnance, which declared the session of 1833 at an end. This laconic announcement was subsequently repeated to the Peers; and thus is the King at liberty, and, as far as the supplies can do it, enabled to carry on the Government for eighteen months to come, without assembling the legislative bodies.

Portugal.—The Steamboat City of Waterford had arrived at Falmouth, with news to the 30th June, from Lagos. Count Villa Flor and Admiral Napier were carrying all before them. They had landed at Villa Real, and were marching to the interior.

Deputations from the neighboring towns had sent in their adhesion.

"Every where the people came forward, and hailed them with enthusiasm; gifts of money, horses, and arms were made, and numbers of the people have joined the expeditionary troops as volunteers. In Villa Real, Don Pedro's troops found 30 pieces of cannon, and £5000 in the military chests, with some hundred stands of arms, plenty of ammunition, &c."

"It is calculated that he had already been joined by upwards of 2,000 men, the greater part of whom are regular troops."

"Letters have been received from Faro of the 27th ult., and from Lagos of the 20th, which state that the expedition from Oporto had met with the most favorable reception, being in both places hailed as a deliverer, and joined by the militia, and the regular troops in the vicinity, and there was no doubt that in less than a month the flag of Donna Maria would be floating over every town in the province of Algarve."

The expedition of Donna Maria's adherents to Algarve seems, according to the accounts received yesterday, to promise well—both by land and water. Captain Napier—we forget his Portuguese title—had sailed for Lisbon with all his squadron, and we have today a report by Captain Clark, of the brig Splendid, which arrived last evening from Tarragona, "that Don Pedro's squadron had captured that of Don Miguel, and had put the whole coast under blockade." Capt. Clark passed Gibraltar on the 11th, and received this report from the brig Commerce, for Tampico, which came out of Gibraltar that morning. This report derives confirmation from the fact mentioned by a Gibraltar paper of the 8th July received in Boston, and quoted by the papers of that city, which says that a vessel arrived there on the 6th, which stated that on the morning of the 4th, about 15 miles from Cape St. Vincent, *the Miguelite and the Patriot squadrons* were seen sailing in two parallel lines, though wide apart, in the direction of Cape St. Mary—the former consisting of eleven and the latter of nine vessels—and that after they had been lost sight of, the report of cannon was heard.

We add some items of general news.

The Irish Reform Bill passed Parliament 274 to 94.

The West India Slavery Bill had been postponed to the 15th.

According to letters from Havre, there were at that port 30 whalers fitting out for fishing voyages. This branch of industry was scarcely known in France three or four years ago.

Gen Solignac had followed the example of Admiral Sartorius, and left the service of Donna Maria.—Marshal Bourmont, on the other hand, had arrived in London, on his way, it was said, to take command of the Miguelite forces.

The accounts from Berlin (received to the 15th instant) state that a number of foreigners had been arrested in that city, on suspicion of fomenting discontents among the people. Several Englishmen were among the number; and, notwithstanding the remonstrance of our Ambassador, Lord Minto, had been sent out of the Prussian dominions on three days' notice.

In consequence of the frequent desertion of the soldiers into France, several Prussian regiments, stationed in the Rhenish provinces, have been ordered into the interior.

It now appears that the conspiracy lately discovered in Naples was confined to the military. An officer, and six sub-officers of one of the cavalry regiment, have been arrested in that city, charged with having plotted to assassinate the King! Reports were in circulation, in Paris, that an insurrection had taken place in Turin: but private letters doubt the correctness of the rumour, admitting, however, that great excitement still prevailed in the Sardinian territories. A barrister, and six serjeants of different regiments, had been capitally convicted of high treason, by courtsmartial, at Turin and Alexandria: five of the latter were executed on the 15th inst.—The Bonaparte family are said to have been mixed up with the affair.

Paris, July 6.—The King has returned from his short journey and has every reason to be satisfied with reception even at Dieppe, which was the favourite spot of the Duchess de Berri; during his absence the political quidnuncs has of course been torturing their brains to concoct new modifications in the cabinet, but there is no reason to suppose that any such will take place at present.

Paris, July 6.—The last accounts from Naples state that the Duchess of Berry was expected at Palermo about the end of June, and that the Prince of Campo Franco, the father of the Count de Lucchesi Palli had prepared a magnificent palace for the reception of his daughter-in-law, but the Duchess could not find her husband there, as he had disappeared and his family did not know what had become of him.—[Messager.]

London, July 24—Several letters from the frontiers of Poland announce that the young lady Haweeker, aged 18, was recently shot at Lublin by the Russians, accused of having furnished to the insurgents provisions; she proceeded quietly to the place of execution between a file of Russian soldiers.

In *Spain*, the ceremony of the *Jura* or swearing allegiance by the members of the Cortes to the daughter of Ferdinand as successor to his throne, was conducted with the usual solemnity and finery. No mention was made in any part of the proceedings of *Don Carlos*. The King of Naples, however, had, through his *Chargé d'Affaires* at Madrid, protested against this departure from the Salic law, as contrary, among other things, to his rights. The protest, which was communicated to the diplomatic corps, is published in the London papers. The poor little Princess to whom each of the Deputies in turn bent his knee, and kissed her hand, as that of his future Queen, was alarmed at the ceremony. A letter from Madrid, published in the London Times, says

—"The young Princess, not accustomed to such bustle, became frightened at the number of times that her hand was kissed, and frequently burst into tears. There was some difficulty in appeasing her, and this was always done by giving her sugar plums."!

In a Liverpool paper of a late date (Gore's Advertiser of 4th July,) we find this paragraph about new packets:

We understand that it is in contemplation to establish a new line of British-built packets between Liverpool and New York. They are to be of about 300 tons register, and constructed for fast sailing. It is not intended in the first instance to carry passengers, the American-built packets having at present a monopoly of this trade, and which they have attained by their regularity, despatch, and superior accommodation; but as it is deemed a reproach to British art and enterprize, that we do not compete with the Americans in this branch of commerce, it is determined to make the attempt in the conveyance of goods, in which respect the vessels will be admirably adapted. At present our merchants have no medium of communication with the United States, but by the American packets, to which there are many objections, and in the way of which some obstacles have been raised by the Government. These, however, will be removed by employing British-built ships.

Among the deaths recorded in late London papers, we find that of *Anne*, second daughter of *Sir Walter Scott*, who died in London on the 25th June. The immediate cause of her death was brain fever—although she is said never to have entirely rallied after her father's death.

Mr. Ellice, the Secretary of War, stated to the House, that flogging in the army within the United Kingdom would henceforth be restricted to cases of "mutiny and drunkenness on duty." This was virtually the proposition of Mr. Hume, which the House refused, not long ago, to concur in.

The giant mortar, which made so much noise during the siege of Antwerp, burst at the camp on the heath at Braschaat on the 18th inst. Some artillery men were practising with it, preparatory to its being exhibited at a review by the King. It had been three times charged, first with 21, then with 17, and afterwards with 15 kilogrammes of powder, and it was ascertained that it carried the shell to the same distance and with the same force with the smaller as with the greater quantity. On being fired the fourth time, it was charged with only 9 kilogrammes of powder; but probably being too closely rammed, it split in two, throwing a piece of iron, weighing 3,060 kilogrammes, or nearly 6,107 English pounds, to a distance of above 20 feet. Happily no one was wounded.—[Galignani's Messenger.]

Loss by Forgeries.—It is averred by the Bank of England, in an account delivered to the Committee of Parliament, that its average annual loss by forgeries in the public funds (and not of bank notes) is *forty thousand pounds*, or *one hundred and seventy-seven thousand, seven hundred and seventy-seven dollars!* The Bank is the agent of Government, for paying the interest on the public funds, and assumes the risk of forged certificates, transfers, receipts, &c.

SUMMARY.

On Monday, the officers of the United States ship Delaware and St. Louis, and some others, of the Navy and Army, were entertained by the Common Council. They assembled at the City Hall, and were thence conveyed to the public buildings at Bellevue, after examining which, they passed over in boats to Blackwell's Island, where, having viewed the new Penitentiary, and other public works there, they dined under an arbour prepared for the occasion. These civilities between our civil and military functionaries all tend to good.

The South at least one step before their northern friends in Female Education.—At the late commencement at Mississippi College, in the town of Clinton, in the state of Mississippi, the following *young ladies* graduated with the usual honors: Narcissa Pleasants, Adaline Brown, Jane and Mary Mills, Margaret Teediman, Charlotte Wolcott, Maria Andrews, Frances Roberts, Virginia Flournoy, and Harriet N. Battle.

Hon. John Stanley.—In reference to the death of this individual, which took place at Newbern, N. C. on the 3d instant, the Raleigh Star says

"It will be recollected that during the session of the Legislature of 1826-'27, while Mr. Stanley was engaged in the duties of Speaker of the House of Commons, and was in the act of delivering a speech, his course was suddenly arrested by an attack of Hemiplegia, and he was borne from the House in a perfect helpless state, having entirely lost the use of one side, and almost the power of speech. In this painful condition he remained until he was delivered by the hand of death. Thus has descended to the tomb one of North Carolina's most distinguished and useful sons. He had devoted a great portion of his life to the public service—chiefly in our State Legislature and in the Congress of the United States; in both of which offices he held a prominent rank, especially as a debater; in which capacity he had few equals—superiors none."

The Papers of the late Robert C. Sands being now arranged for the press, it is earnestly requested that all persons holding subscription papers for the proposed publication would return them to this office, or that of the Evening Post, or Commercial Advertiser, as most convenient.

Among the deaths by Cholera, at Frankfort, (Ky.) is that of Henry Madison, a free colored man, who was a pressman in the office of the Commonwealth. He had been liberated sometime ago by the Rev. R. J. Breckenridge, on condition of becoming a citizen of Liberia. He accepted these terms, with the privilege or remaining in this country until the proceeds of his labor should be sufficient to purchase his wife and child. He had in this state of things, turned his attention to the art of printing; he had acquired some knowledge of type setting, and was an admirable pressman. His object was, to establish a newspaper in Liberia, and the editor of the Commonwealth says, "he must have succeeded," as he was a man of strong natural intellect, and of the most unexceptionable morality. With these laudable objects in view, he employed himself diligently, until his course was arrested, and himself cut off by the cholera. His death is considered a serious loss to the colony.

The Natchez Journal estimates the number of slaves in that State, (Mississippi) who have died of Cholera, at not over 1000, and in Louisiana at 10,000, or about 8 per cent. of the entire slave population. Valuing each slave at $400, which is not an exaggerated average, this would make the pecuniary loss alone of Louisiana *four millions*.

The woods near Sandy Point, Westmoreland county, Va., were set on fire by lightning, last week, and much valuable timber was destroyed and other damage done before the flames could be extinguished.

No "proper place" for it.—A law of Virginia allows the retailing of spirituous liquors at "*proper places*," in the different counties. In one of the counties, the magistrates have decided that there is no "*proper place*" within their jurisdiction for such a purpose.

Decision in the Case of the Ship Henry Ewbank.—His Honor Judge Davis gave his opinion yesterday in the District Court in the case of the claimants for salvage, on the ship Henry Ewbank and her cargo. He decided that the abandonment of the ship by her officers and crew was not premature, as alleged by the underwriters, but, in the circumstances of their situation, was justifiable. The ship as found at sea was a clear case of derelict property. The claim of George Wheelwright for himself and those who navigated the ship into Boston, as sole salvors, on the ground of a new enterprize, the Judge said could not be sustained. The natural and true place for Mr. W. was with the master and owners of brig Padang.

The nett amount of the sale of the ship and cargo, deducting expenses, would be about $30,000. Of this sum he decreed a moiety,—viz, $15,000 to the salvors. The various claims set up he reduced to two, the claims in behalf of the British bark Hope, and the claim in behalf of the American brig Padang.

To the brig Padang, her master, officers and crew, he decreed $9000; to Captain Brewster, $1284; Geo. Wheelwright, mate, $642;—$428 each to the seamen of the brig who assisted in bringing in the Henry Ewbank, and $214 to each of the remainder of her crew.

To the bark Hope he decreed $600—$510 to the master; $255 to Metcalf, the mate; $170 to those of the crew who assisted in navigating the ship; and $85 to each of the nine seamen who remained on board the Hope.—[Boston Atlas.]

Bishop M'Ilvaine has arrived at Gambier, Ohio, with his family, and taken up his permanent residence at that place. It is understood, says the Cincinnati Advertiser, that he has succeeded in collecting funds to progress extensively with the buildings deemed necessary for Kenyon College, in which the Theological Seminary has been merged almost from the time of its foundation.

Our Harbor.—The recent entry and departure of the United States Ship *Delaware*—one of the heaviest vessels afloat, probably, in any service—have naturally enough aroused attention to the comparative neglect of the harbor of New-York, as a naval station, by the General Government. At first blush, it would seem that the great commercial city of the Continent—the port which receives more vessels annually than any other three ports in the whole Union, and which, by consequence, furnishes, in like proportion, employment to more of the artisans connected in every way with shipping, and possesses more resources and facilities of every sort for equipping vessels—would of course be the port best adapted for a great naval station. In such a port, there are always thousands of experienced hands, which—habitually employed in satisfying the ever-recurring wants of an active and prosperous commercial navigation—may, at a moment's warning, be transferred, in a case of emergency, to the public service; and, the work required once done, be returned again to their accustomed labors, without any expense to the Government beyond that of the time and labor given to the particular object. This, of course, renders unnecessary those permanent engagements which, in order to secure competent services, when required, are sometimes, on stations of less resources than this, unavoidably entered into. If, for example, there be urgent occasion to finish, in the shortest possible time, a vessel upon the stocks, the Commander of the Brooklyn Yard has only to send his boat across the river, and, in a few hours he may obtain from one to five hundred ship carpenters, as the need may be. How could such a demand be met at Norfolk, or Washington, or Newport, or even Boston? This is but a single illustration of the manifold advantages which a naval station must derive from proximity to a great commercial city. Every reader, at all conversant with such matters, will readily understand how much this illustration might be extended. But, unhappily, through prejudice or inaccurate information, the bar off Sandy Hook has been thought to present an objection outweighing all the incontrovertible advantages of New-York as a naval port; and this seems to have been so systematically acted upon, that it was almost passing into an axiom, that a line of battle ship of the larger class could not safely enter our harbor. Happily, through some good influence—we willingly suppose it to have been in part, at least, that of the excellent officer, and not less excellent man, recently transferred from the command at Brooklyn to the office of Navy Commissioner—the Delaware was ordered here. She came from the *pet* Yard at Norfolk, whence she was forced down, *though light*, for miles through a bed of soft mud, took in her stores below, and arrived off here drawing near 26 feet: the wind not being fair, she was towed over the bar by steamboats, having nearly *four feet* water to spare in the shallowest part, extending perhaps not more than two or three times her length. She has now gone to sea, beating down the bay like a pilot-boat, passing the bar under sail, and, though the swell of a heavy south-easter had not subsided, having always more than half a fathom to spare.

With these facts before us, and conceiving that by them the only plausible reason for not making New York the great naval station of the country, is removed, it may be assumed, we trust, with some certainty, that we shall not hereafter hear any more of such a bugbear as the bar off Sandy Hook.

Munificent Gift.—James Boorman, Esq. of this city has presented to the New York Institution for the Blind, a ten years lease of the buildings and ground formerly called Abingdon Place, a short distance beyond the paved part of the city, and between the 8th and 9th Avenues. The main building on the premises is a large substantial two-story house, 100 by 54 feet, situated on a rising ground overlooking the Hudson river. There are also two stone kitchens apart from the main building, and a well of good water near the house. The ground is now in good order, under cultivation as a garden, and contains a little over two acres. The situation is stated to be one of the pleasantest on Manhattan Island, in the immediate vicinity of the city, and offers fine air, good soil for cultivation, a shady grove and flower garden, with wide and level paths. The house is very large, two stories high, with a spacious attick, abundantly large enough for a work shop and place for exercise in bad weather, while the distance from the City Hall is only about three miles.—[Gazette.]

[*From the Chinese Courier.*]

Chinese Manufactures in Metal.—Among the most curious of the Chinese manufactures in metal is the far famed gong, the composition of which is said to be tin and copper in certain proportions, to which in some cases a small quantity of silver is added. The secret of annealing the alloy in such a way as to admit of its being hammered was discovered some years since in France, where gongs are now manufactured. Owing to some peculiarity in the composition, the metal in the state we see it is uncommonly *short* and brittle, and this property for many years defied the ingenuity of the workmen who attempted to hammer it. It was at length found that by heating the metal to a red heat, and plunging it into cold water, it was rendered malleable, and when the process of hammering was completed, it was only necessary to suffer it to cool gradually, in order to restore its brittleness. The sonorous quality of the gong is well known, and it has been introduced with success on board ships to be used in foggy weather, when a bell is scarcely audible. The Chinese prohibit the expertation, as well as that of all military implements whatever, The gong constitutes an indispensable instrument in the frightful discords of a Chinese orchestra, and is always a symbol of official rank preceding the mandarins when going from place to place with their attendants.

In boats, flat and inferior gongs are used for the purposes of saluting, and in the shops at Canton may be seen instruments of every kind, from the small disc of a few inches, used by beggars, to those of two feet in diameter.

Among the ancient Chinese, a sonorous metal of somewhat similar composition was used for making a peculiar kind of bell which was struck in religious ceremonies, and for constructing small figures of divinities, spear heads, &c. These may sometimes be met with in the shops where antiques and old China are sold, though most frequently the specimens offered for sale as such are mere modern imitations.

Many of the castings in brass and composition metal are curious, and even beautiful. The forms of the censers used for holding burning sandal wood, and odoriferous matches are sometimes exceedingly graceful and always curious. Specimens are occasionally met with which are delicately inlaid with arabesque devices in silver, others gilt and elaborately embossed, for which the most extravagant prices are demanded. To these vessels which the Chinese call *fun-heang* belong as *pendants*, jars of the same material similarly decorated, which contain the brazen implements used for spreading the *ashes* which are preserved in the censers, and into which the bamboo stems of the matches are stuck when lighted. One of these is an indispensible article in the furniture of an altar, and of the little shrines which may be seen at gates of houses and streets, in boats and in the principal apartments of all Chinese dwellings.

A composition is used for casting large medals covered with mystic characters, which are suspended from the necks of children to protect them from evil influences, in which the Chinese place implicit faith. They are usually shaped like the common coin, or cash, and are from one to three or four inches in diameter.

Brass is extensively manufactured for purposes similar to those for which it is used by Europeans. The economical propensities of the native workmen induce them, however, to put more zinc into their brass than is necessary, and the metal is thereby rendered less tenacious, and of an inferior color. The pans in which the extract of opium used for smoking is made, are large polished brass hemispheres, which are chosen in preference to iron or tin. The rolled brass and copper used here is imported from Europe, the Chinese inventions for the purpose being exceedingly imperfect.

The so-called bronze of China is little else than brass, the surface of which is colored by means of an acid. Few specimens of an alloy answering to bronze are to be found, and those chiefly of ancient date.

Immense quantities of lead are used in China for the interior casing of tea-chests. The sheet lead is very much thinner than that of Europe, and the mode in which it is made is extremely curious. The workman has before him a flat earthen tile of about 18 inches square, neatly covered with brown paper, and another of the same kind placed above it, the papered surfaces of the tiles being in contact. When about to cast a sheet of lead, a sort of slip or check is placed between the tiles to regulate the thickness, and the workman sitting on his haunches on the upper tile, adroitly lifts the edge sufficiently to enable him to dash a quantity of the melted lead between the two; he then suffers it to descend with the weight of his body; the superfluous metal is forced out at the sides and falls to the ground, while the sheet of thin lead remains between the tiles. These sheets are trimmed upon the edges, and soldered together by another person, to form pieces of the proper size for the chest linings.

Gama Grass.—The following account of this extraordinary Grass, appears in the last Fayetteville (N. C.) Observer. We do not know whether in this region the "Gama Grass" would thrive, but its yield is so prodigious that it may be worth the trial.

Sampson County, July 20, 1833.

Mr. Hale: When we were together, a short time since, I promised to send you some account and description of the Gama Grass, with the result of such experiments as I made with it.

The first notice I saw of this Grass, was by Dr. Hardeman, of Missouri; whose account of its wonderful production, and valuable properties, may be found in the 8th vol, of the American Farmer, page 244. I considered the calculations he made of results, visionary, and had forgotten it.

It, however, attracted the attention of Mr. James Magoffin, of Alabama, who procured some seed, and has, now, been cultivating it several years.—The result of his experiments may be seen in the 13th vol. of the American Farmer, pages 50, 143, and 215. Also, in the 4th vol. of the Southern Agriculturalist, pages 312 and 475.

Further experiments with this grass are detailed by Mr. William Ellison, in the 4th vol. of the Southern Agriculturalist, page 404, and 5th vol. of the same work, page 5. To these several communications, I would refer such of your readers as have those works, for a better and more particular description of the grass, than I can give them.

The combined results of the experiments of these gentlemen show, that the quantity af hay which this grass yields, is far greater than any hitherto tried.—the quality of the hay is equal to any other; and that, both when green and when cured, it is greedily eaten by stock of all kinds. Mr. Magoffin informs us, he has actually made at the rate of ninety tons of green hay per acre in one year—equal to between 20 and 30 tons of cured hay. Dr. Hardeman states, that a single root, covering a circle, the diameter of which was two feet, yielded at one cutting 52 lbs. of green hay, which when dried weighed 20 lbs.; and consequently, that an acre of ground, filled with roots equally productive, would yield more than 270 tons of hay. However exorbitant these accounts may appear at first, the high standing of these gentlemen leaves no room to doubt their accuracy. My own experiments induce me to believe, that under circumstances, *in all regards* favorable, they may be realized.

Of the immense value of this grass to us, in a hot climate, and on sandy soil, no doubts can exist.

I have ascertained the following facts with certainty, that it grows spontaneously and luxuriantly, in our country, on alluvial bottom and rotten limestone lands. I have planted it in a poor sandy loam, on a clay foundation, (such as is the general quality of the stiff pine lands of our country) and on a sand hill, originally as barren and as arid as the deserts of Arabia. These soils, *well manured*, produce it abundantly. Even the long drought of 1832, (which, with me, continued from 23d May to 1st August, with the exception of one slight rain on the 9th of July) did not materially affect its growth. It may be cut as early as the 1st of May, and the cutting repeated every thirty days, until frost. It ought to be planted in drills three feet apart, and two feet space between the roots. An acre will then contain 7,350 roots. A single root of the second year's growth, (on the dry sand hill,) at three cuttings, has this year already yielded 7 1-2 lbs. of green hay, and will without doubt yield at least as much more before frost. At that rate, an acre of *pure sand hill*, well manured, would yield 55 tous of green hay, equal to about 18 tons of cured hay, of a quality as good as the *best blade fodder*.

In January last, I drilled some seed, in drills two feet apart, with seed dropped at intervals of six inches, intended for transplanting next Fall. The whole ground is now covered with a mass of grass 2 1-2 feet high. On the 10th of this month I cut and weighed the product of one drill 35 feet long. It yielded 25 lbs. of green hay, which, when cured, produced 8 lbs. of delightful forage. At this rate, an acre would yield 15,750 lbs. of green hay at one cutting. It may yet be cut three times more, and consequently, the product would be 63,000 lbs. of green hay, from seed planted in Janaary last. The product of old roots is from two to three fold.—These seeds are planted on pine land, with a poor sandy loam on the surface, with a clay foundation—*well manured.* I have not made any experiment with this grass, on any other soils than those above specified, but I know it grows much more luxuriantly on alluvial bottom, and rotten lime stone lands.

Mr. Magoffin is *certainly mistaken* when he supposes this grass is found *indigenous only* in the western prairies. He furnished me with a few seeds of his own raising. I also procured some from Mr. Ellison, of South Carolina, which grew in Fairfield District, and some from Gen. Owen, which grew spontaneously on his plantation in Bladen county in this State, on the alluvial soil of Cape Fear.*

They are all planted near each other; and are, unquestionably, the same species of grass. There is not the least difference between that found in this State, and that from South Carolina. That sent me by Mr. Magoffin, from Alabama, is a little different in color, being of a pale hue, and of a little finer texture.

This grass is, without doubt, the 'Tripsacum' of botanists. In Elliott's Botany of South Carolina and Georgia, vol. 2d, page 552, two varieties are described:

"1st. Dactyloides—Root perennial—Stem 4 to 5 feet long—Leaves large, 3 feet long, 1 1-2 inches wide—Flowers, in terminal spikes—Spikes numerous—Very rare—have only seen it growing on the margin of the Ogeechee river—Flowers from May to July."

"2d. Monostachyon—Root perennial—Stem. 3 to 5 feet long—Leaves 1 to 3 feet long, 1 inch wide—Spike, solitary—Flowers in terminal spikes—Grows abundantly on the Sea Islands, (particularly on Paris Island) and along the margin of the salt water—Flowers from August to October."

For any practical purpose, there is no difference between these two varieties. They are found growing together.

The following characteristics will render this Grass obvious to common observers:

It grows in tufts or bunches, measuring about two feet across and three in height, which tufts are composed of numerous branches, springing from a common root, which is tuberous in its form for about three inches, and terminates in many small, but strong radicles. These branches, in their origin, form the common root, and have a peculiar arrangement; being produced from two opposite sides of the tuberous portion only, and departing from it at an angle in opposite directions, gives to this part of the plant a flat shape.

The leaves which (previous to the period of flowering) all issue from the root, are of a deep green color, from two to three feet long, and from one to one and a half inches wide, are shaped like a blade of fodder, but are sawed or rough on the edges, particularly towards the point. The leaves commence in a sheath, at the bottom, which encloses and covers the origin of several other interior leaves.—About the last of May, a number of flower stems shoot up from different parts of the buuch, and grow from 3 to 7 feet high, and terminate in one, two, or more finger-like appendages (called by botanists spikes.) The upper end of the spike resembles a single spike of the tassel of Indian corn, and has a blossom (farina) on it. The seeds, which vary from 3 to 6 inches on each spike, are embedded immediately below this tassel, and when flowering, each has a single tag, of a purple color, resembling the silk of Indian corn. The tassel drops as soon as it has shed its pollen, and then the seeds ripen, one by one, and drop off. The seeds are embedded on opposite sides, of the stem, and attached together, after the manner of the rattles of a rattle snake.

The flower stem is jointed and clothed with leaves, much shorter than those which proceed from the root, the sheaths of which embrace the stem, to within a short space of the next joint. It is channeled on alternate sides, like a stalk of corn. When full grown, it puts out branches at nearly every joint, which terminate and produce seeds like the main stem.

I have been thus particular in my description, to enable persons to search out this grass. I am satisfied it will be a source of much wealth and comfort in our *pine* country particularly. It is certainly the spontaneous product of our own State. I know it grows in New Hanover, Brunswick, and Bladen counties, and have been informed it is found in Craven and Orange, and may, probably, on any of our alluvial bottoms.

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* A well known writer in the Newbern Spectator of the 19th instant, (H. C. B.) states that during the last year he found the Gama grass on the shore of the Neuse river, and that a gentleman in Florida assured him he had found it in that Territory,—[Editor of the Observer.]

Now is the time to search for it. It is in bloom, and more readily identified by the peculiarity of the seed. When not in bloom, it very much resembles some other grasses which are different in their nature, and not so valuable. I might add much more regarding it, but again refer your readers to the essays above referred to.

Very respectfully, yours,
Wm. B. Meares.

[N. B. Such Farmers as can afford to pay the cost of the American Farmer, and Southern Agriculturalist, or New York Farmer, and neglect to subscribe for them, or one of them, do not deserve the benefit of any improvement or discovery in Agriculture.]

New Process of extracting Cream.—It is considered a great object by the farmers to extract from milk the greatest quantity of cream in the least possible space of time. To effect the separation of cream from serum, which chemists suppose to be combined merely in a state of mechanical mixture, it is well known, by those conversant in dairy management, that some metallic substances more readily act than others, and it is notorious that, in almost all the great diaries, the milk is suffered to stand in lead, copper, or brass vessels, in which a larger quantity of cream is thrown up, than in either wooden or earthen pans. As the dairy-man obtains additional profit, in proportion to the quantity of cream which is thrown up, so it is to his interest to keep it in these vessels as long as he can until the whole of the cream is separated, by which additional standing it often acidifies, and will consequently dissolve the metal with greater facility. With respect to the lead taken up in solution in the cream, sufficient instances of its noxious effects have been pointed out by Mr. Parkes in his chemical essays.—Mr. Booth, who has resumed the subject of inquiry, has proved that in a very great variety of cases, which have come before his notice, not only lead but even copper sometimes exists to a considerable extent in butter. May not the conflicting opinions of medical writers respecting the wholesomness or unwholesomeness of butter have been founded upon observations of its purity, or accidental or mischievous contaminations collected from vessels used in the process of making it? It would appear that, although new to this country, the practice has for some time been adopted in America, of introducing spelter into the milk for the purpose of facilitating the separation of the cream, and with much advantage and success; but more latterly the application of zinc vessels to the purpose of extracting cream has produced results to an extent hitherto unattainable, whilst none of the serious effects before described can arise from the use of this metal. A very ingenious apparatus has been constructed for this purpose by Mr. Keyser, who has brought the manufacture of articles from malleable zinc to a high degree of perfection, one of which is deposited for exhibition at the National Gallery of Practical Science, and in which vessel, the separation of the cream is still further facilitated by the application of heat, by which means it is that the celebrated clotted Devonshire cream is procured. Into the basin containing the milk is introduced a plate of perforated zinc, the area of which is equal to the bottom of the basin: in the course of a few hours, all the cream will have been separated, and will be of that consistence, that it may be lifted off by the fingers and thumb. In these vessels, the increase of the quantity of cream is 12 1-2 per cent., and of the butter upwards of 11 per cent. The advantages are not, however, limited to this increase of quantity, as, in this process, ten or eleven minutes churning is sufficient to make butter, which, in the ordinary process, requires ninety minutes, whilst a butter similar to that prepared in Devonshire may be made simply by the brisk agitation of the cream without recourse to a churn. It may be observed that analysis proves the serum of milk, which has been submitted to this process, is more or less impregnated with the soluble salts of zinc, and which, from their emetic and astringent quality in a state of moderate concentration, might be considered noxious, if introduced into the animal economy, but is equally fitted for the support of pigs, who thrive and grow rapidly fat upon it.—[London New Monthly Mag.]

Formation of the Brain.—The brain of man excels that of any other animal in complexity of organization and fullness of development. But this is only attained by slow and gradual steps. Examined at the earliest period that it is cognizable to the senses, it appears a simple fold of nervous matter, with difficulty distinguishable into three parts, while a little tail-like prolongation towards the hinder part is the only representation of a spinal marrow. Now in this state it perfectly resembles the brain of an adult fish, thus assuming, *in transitu*, the form that in the fish is permanent. In a short time, however, the structure is become more complex, the parts more distinct, the spinal marrow better marked; it is now the brain of a reptile. The change continues; by a singular motion certain parts (*corpora quadrigemina*) which hitherto appeared on the upper surface, now pass towards the lower; the former is their permanent situation in fishes and reptiles, the latter in birds and mammalia. This is another advance in the scale, but more remains yet to be done. The complication of the organ increases; cavities, termed *ventricles*, are formed, which do not exist in either fishes, reptiles, or birds; curiously organized parts, such as the *corpora striata*, are added, —it is now the brain of the mammalia. Its last and final change alone seems wanting, that which shall render it the brain of MAN. We thus see that man, considered merely as an animal, is, by his organization, superior to every other being;—and that, in the growth of a single individual, nature exhausts, as it were, the structure of all other animals before she arrives at this her *chef-d'œuvre*. But we have not yet done with the human brain M. Serres has made the still more singular observation, that in the advance towards the perfect brain of the Caucasian, or highest variety of the human species, this organ not only goes through the animal transmigrations we have mentioned, but successively represents the characters with which it is found in the Negro, Malay, American, and Mongolian nations. Nay, farther, the face partakes in these alterations. One of the earliest points in which ossification commences, is in the lower jaw. This bone is, consequently, completed sooner than the other bones of the head, and acquires a predominance which, as is well known, it never loses in the Negro. During the soft pliant state of the bones of the skull, the oblong form which they naturally assume, approaches nearly the permanent shape of the American. At birth, the flattened face, and broad smooth forehead of the infant, the position of the eyes rather towards the side of the head, and the widening space between, represent the Mongolian form; while it is only as the child advances towards maturity that the oval face, the arched forehead, and the marked features of the true Caucasian become perfectly developed. —[Athenæum.]

POETRY.

NAUTILUS.

By Hartley Coleridge.

Where Ausonian summers glowing,
Warm the deep to life and joyance,
And gentle zephyrs nimbly blowing;
Wanton with the waves that flowing
By many a land of ancient glory,
And many an isle renowned in story,
Leap along with gladsome buoyance,
There Marinere,
Do'st thou appear,
In fairy pinnace gaily flashing,
Through the white foam proudly dashing,
The joyous playmate of the buxom breeze,
The fearless foundling of the mighty seas.

Thou the light sail boldly spreadest,
O'er the furrow'd waters gliding,
Thou nor wreck, nor foeman dreadest;
Thou nor helm nor compass needest,
While the sun is bright above thee,
While the bounding surges love thee,
In their deepening bosoms hiding,
Thou canst not fear,
Small Marinere,
For though the tides with restless motion,
Bear thee to the desert ocean,
Far as the ocean stretches to the sky
'Tis all thine own, 'tis all thy empery.

Lame is art, and her endeavor
Follows nature's course but slowly,
Guessing, toiling, seeking ever,
Still improving, perfect never;
Little Nautilus, thou shewest
Deeper wisdom than thou knowest,
Lore, which man should study lowly.
Bold faith and cheer,
Small Marinere,
Are thine within thy pearly dwelling,
Thine, a law of life compelling,
Obedience, perfect, simple, glad and free,
To the great will that animates the sea.

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Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD. U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Rail road Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m25

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 1st to the 12th day of August, 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Aug. 1....	6 a. m.	63	29.97	WSW	light	NW	fair
	10	68	29.98	..	..	..	..
	2 p. m.	79	29 93	..	..	..	..
	6	78	29.90	SW	..	..	..
	10	72	29.91	..	..	..	..
" 2...	6 a. m.	67	29.95	SW—WSW	..	..	cloudy
	10	74	29.98	..	..	WNW	fair
	2 p. m.	82	29.98	SW	..	W	showery —fair
	6	74	29.98	..	..	W by S	fair
	10	72	30.02	..	..	..	..
" 3....	6 a. m.	65	30.06	NE	..	ENE	.., and low scuds from ENE
	10	70	30.06	ENE—SSE	..	ENE—SE	..
	2 p. m.	78	30.05	SSW	..		clear —upper wind from SSE
	6	74	30.02	..	..		..
	10	70	30.03	E	..		..
" 4....	6 p. m.	71	30.02	SE—SSW	..	WSW	cloudy
	10	76	30.02	SSW	..	..	..
	2 p. m.	82	29.99	WSW	moderate	..	fair—cloudy at 4—rain and thunder
	6	72	30.02	WSW—WNW	..	..	rain
	10	70	30.03	NNW	light		cloudy —rain
" 5....	6 a. m.	68	30.04	NNE	faint	W by S E—SE	cloudy—scuds from ENE
	10	76	30.05	E—SE	light	W by N SE	fair —cloudy
	2 p. m.	82	30.05	SE	moderate	W by N WNW	cloudy
	6	76	30.05	..	..	WNW WSW	..
	10	73	30.05	..	..		..
" 6....	6 a. m.	73	30.04	..	light	SW SE	..
	10	78	30.05	SSE	moderate	SW SSE	.. —rainy
	2 p. m.	73	29.99	..	gale	.. ..	rain—thermometer falls at 5.30
	6	68	29.95	..	gale--strong	WSW S	thunder and rain —cloudy
	10	67	29.98	..	moderate		cloudy
" 7....	6 a. m.	70	29.95	SW—NW	light	WSW NW	fair —cloudy
	10	78	29.98	NW—WSW	..	.. ..	..
	2 p. m.	82	29.97	SW	..	WSW	..
	6	73	29.97	SSW	..	..	..
	10	75	30.00	..	..	..	clear
" 8....	6 a. m.	68	30.08	NNW	moderate	WSW	fair
	10	72	30.10	NW—N	..	..	.. —haze bank at S
	2 p. m.	76	30.08	N—NE	[light	NW	..
	6	75	30.04	FNE—E	..	..	..
	10	70	30.01	S	..	..	.. —rain in the night
" 9....	6 a. m.	70	29.88	SSW—NW	moderate	WSW WNW SSW brisk	cloudy—wind NW at 8--clouds WSW NW
	10	71	29.90	NW—N	fresh]	W by S NW-W-NNE	fair
	2 p. m.	72	29.92	NNW	..	W by S NNE	..
	6	70	29.95	N	moderate	.. ..	..
	10	66	30.00	..	light		..
" 10....	6 a, m.	60	30.10	..	..	.. ..	..
	10	64	30.12	NW	..	.. ..	..
	2 p. m.	77	30.11	NW—SSW	..	W by S NW	..
	6	70	30.10	SSW	..		..
	10	66	30.11	..	..		..
" 11....	6 a. m.	66	30.10	SW by W	..	W by S	..
	10	72	30.11	..—SSW	moderate	.. S	..
	2 p. m.	78	30.10	SSE	..	.. SSE	..
	6	73	30.06	..	..	.. ..	..
	10	68	30.06	..	..		.. —bank at W
" 12....	6 a. m.	70	29.97	..	..	WSW	cloudy
	10	76	29.99	S by E	fresh	WSW SSW	..
	2 p. m.	82	29.90	..	strong	WSW S	fair
	6	78	29.84	..	moderate	.. ..	.. —cloudy at W
	20	75	29.80	..	..	SSW	cloudy

MARRIAGES.

On 24th ult. Dr. D. O. Harrison, to Elizabeth, daughter o Mr. Horace Butler.

On Thursday afternoon, August 1st, by the Rev. Dr. Dewitt, Mr. John Richardson, of New-Orleans, to Miss Aurelia, eldest daughter of Capt. Robert Waterman, of Brooklyn, L.I.

On Wednesday, July 31st, by the Rev. Dr. Clark, Mr. Henry Carter, of Boston, to Anne, daughter of Mr. James Bolton, of New-York.

On Thursday evening, by the Rev. Dr. Creighton, Mr. Robert Stuyvesant, to Miss Margaret, daughter of C. Mildeberger, Esq. both of this city.

At Hempstead, L.I. Jones Pearsall, of New-York, to Miss Mary Ketcham, of Huntington South.

On Monday, at Weehawken, N. Jersey, by the Rev. Dr. Geissenhaeiner, senr., Mr. Herman Von Dreele, of Quackenbruck, Germany, to Miss Louisa H. Loss, daughter of the late Charles Loss, Esq.; also, Mr. Henry William Quitzow, of Hamburg, Germany, to Miss Euphemia Agatha Kallenbach, step daughter of Mrs. Frederica Loss.

At Newark, N. J. August 6th, by the Rev, Matthew H. Henderson, Rector of Trinity Church, William S. Faltoute, Esq. to Susan Caroline, elder daughter of Sheldon Smith, Esq.

At the same time, by the same, Lieutenant Henry Eagle, of the United States Navy, to Minerva, younger daughter of Sheldon Smith, Esq.

At the Personage in Hempstead, on the evening of the 17th ult. by the Rev. R. D. Hall, Rector of St. Georges, Mr. Sylvanus Brewer, to Miss Ann Tredwell, daughter of Benjamin Tredwell.

In Sag Harbor, Mr. Aaron Oakley, to Miss Esther King.

DEATHS.

On Wednesday, Michael Schuler, aged 53.

On Tuesday, Patrick M'Kenny, aged 32 years.

On Tuesday, Joseph V. Jenks, in his 28th year, of Pawtucket, R. I.

On Tuesday, John Burnett, youngest son of Captain Benj. Morrell, aged near 2 years.

On Monday, Mrs. Prudence, widow of the late Daniel N. Tucker, aged 40 years.

On Wednesday, James Wilson, in his 40th year.

Last evening at the residence of her Grandfather, in Shrewsbury, N.J., where she had gone for the restoration of her health, Ann Eliza Whitlock, daughter of the late Thaddeus Whitlock, of New-York, aged 22 years, 8 months and 8 days.

Last evening, of apoplexy, Mrs. Elizabeth Robson, widow of the late Capt. Joseph Robson, in her 51st year.

Last evening, at Newtown, (near Hallets Cove) L. I., Mrs. Maria, wife of Thomas R. Lawrence.

On Tuesday evening, of hydrocephalus, John Jacob Lansing, infant son of Cornelius Dickinson, M. D., aged 7 months.

In Hudson, Wm. F. Hardick, aged 76.

In Virginia, Charlotte, daughter of Hugh Nelson, aged 22.

At Williamsport, Pa., Wm. Boyd Smith, Esq.

In Albany, Mrs. Catharine Vroman.

At Fayetteville, N.C. Duncan Thompson, Esq.

At Philadelphia, on 28th ult., William Hitchcock, youngest son of Lieut. John G. Reynolds, of the U. S. Marine Corps.

At Fredericksburg, Va. on Saturday morning last, in the 61st year of his age, Captain Robert Parrott, long a highly respected citizen of that place.

At Belgrade, Washington County, N. C., on the 4th instant, Mrs. MARY PETTEGREW, aged 84 years, 7 months and 29 days. This venerable and estimable lady was the consort of the Rev. Charles Pettegrew, first Bishop elect of the Protestant Episcopal Church of North Carolina.

Obituary.—It becomes our painful task to record the death of another of our most eminent physicians. Dr. JAMES M. STAUGHTON died yesterday about 5 o'clock, after a lingering illness of three weeks. He came among us but a few years since an entire stranger. His high professional character soon pointed him out as a proper person to discharge the responsible duties of a professor in our medical college, and it is but justice to say that he filled his station with great credit to himself and much honor to the institution. He has been cut off in the prime of life and in the midst of his usefulness. In his death society has sustained a heavy loss, and the poor have in particular been deprived of a most active and efficient friend, who was ever ready to administer to their necessities. Throughout his his protracted illness and suffering, he was sustained by that hope which *alone* can rob death of its sting and the grave of its victory.—[Cincinnati Gazette, Aug. 8.]

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,

No. 264 Elizabeth street, near Bleecker street,

New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.

J 15 tf

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also: AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry. Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street. New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1½ do. ½ do.
800 do. 2 do. ½ do.
800 do. 2¼ do. ⅝ do.
soon expected.

Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them -3 4meowr

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other decription of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

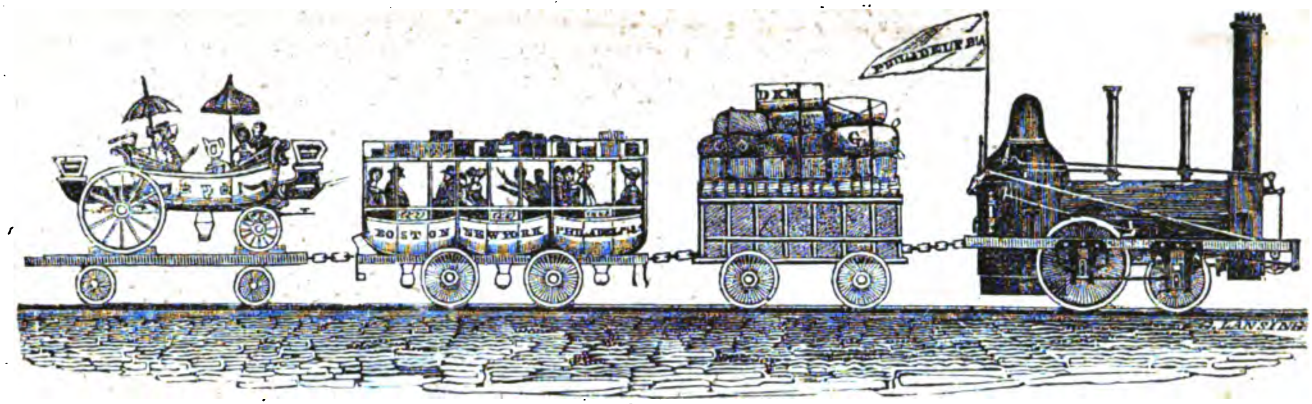
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, AUGUST 24, 1833. [VOLUME II.—No. 34.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, AUGUST 24, 1833.

BOSTON AND WORCESTER RAILROAD.—By a letter from J. M. Fessenden, Esq., Chief Engineer of the Boston and Worcester Railroad, we learn that thirteen miles of the road will be completed and in use this fall—probably in October. The next thirteen miles are contracted for, and the grading progresses rapidly; and the remaining seventeen will soon be put under contract, and probably the whole route will be completed next year. The Boston and Worcester road will, in a few years, have an immense travel. This is, probably, only the commencement of a long line of railroad, which will eventually reach far into the western country. We cannot doubt but that the enterprize which has already commenced *three* very important lines of Railroad—the Providence, the Lowell, and the Worcester—will push this one on, and surmount all the difficulties, great even as they are, in order to compete with New-York for a part of the trade of the west. With a Railroad to Albany, suitable for locomotive engines, so constructed as to be used in winter, Boston would take no trifling share of the western produce direct, instead of by the circuitous route of New-York. There would be so much time saved, no changing from car to barge, and then to sloop or other vessel, as now. The cars from the far west would continue directly through, and deposit their load where they are to be used or shipped.

That period may, by some, be thought *far, very far* off, but they may rest assured that *it is not so far distant as is that of the commencement of the Erie Canal*, 1817.

The location of this road may be considered an uncommonly favorable one, as, with a single exception of less than one-eighth of a mile, with 1150 feet radius, there will be no less a radius than about 1500 feet, and its maximum inclination is only 30, and its average only 12 *feet per mile.* It is to be constructed with an edge rail, of a new form, with a greater bearing surface than the Liverpool and Manchester, and rails that will weigh 40 lbs. to the yard, and the chairs 15 lbs. each, laid upon large cedar sleepers, placed transversely upon ruble stone, in longitudinal trenches of different depths, according as the frost penetrates the earth.

The Report of the Chief Engineer, which accompanies this letter, will be found in Railroad Journal, Vol. I, page 242.

The stock of the Tonawanda Railroad, which is designed, we believe, to be constructed from Rochester, through Le Roy and Batavia, to Attica, in Genesee county, N. Y., was taken a few days since in a few hours after the books were opened, although when previously opened for the same purpose a few months since, no stock was taken.

This circumstance would be sufficient, if further evidence were necessary, to show the present feeling of capitalists relative to the importance of Railroads. Railroad stock, in judicious locations, will, ere long, be equal, if not superior, to any other investment.

PETERSBURGH RAILROAD.—This road has been completed to Blakely, and the Company's cars have passed several trips through the entire line. The inclined plane from the depot at Blakely to the river, (only a few hundred feet) is also nearly completed. Thus we see a *Railroad* in successful operation in the "Old Dominion." It is fair a beginning for Virginia, and its influence will be felt to the extreme parts of the State. It will cause the worn out plantations and deserted mansions of lower Virginia to be again inhabited—again the seat of prosperity and hospitality—and it will, we hesitate not to repeat what we have before said, be of more importance to Virginia than all her previous public works, as it will at once show them that of which they could, in no other way, be fully convinced, the superiority of railroads over canals. It is now a short road, but it will not long be so. It will be continued northward to Richmond, to Fredericksburg, to Washington, and by that time a road will have been completed from New-York to Washington,—thus forming an entire line of railroad from New-York to the Roanoke river, a distance of 450 miles, which may, aye, and will, within seven years, be travelled in less than 48 hours, or two days. The Roanoke, however, will not be the southern termination of this railroad. South Carolina has done nobly, and will do more. She will extend her road to Columbia, Camden, and Cheraw. Georgia will not remain long an idle spectator. She is, indeed, already awake. A meeting has already been held, with a view of devising measures to construct a railroad from Athens to the South Carolina railroad at Augusta. North Carolina, too, will do her part towards continuing the line. Another effort has recently been made in North Carolina, and such men as WILLIAM GASTON, have come forward in aid of the cause and surely such leaders as GASTON, in a cause of so much importance to every landholder and business in the State, as that of railroads, will not be in want of followers. A line of railroad will therefore be completed, within seven years from this date, from New-York to Athens, Georgia. There will, also, be completed within the same period of time, more than 3000 miles of other railroad within the United States, in addition to what is now in use, which will open to our Atlantic cities new sources of business and wealth, and to the interior increased facilities for the transportation of produce and merchandize, and cause a state of prosperity scarce to be imagined by those who are only in the habit of contemplating events as they transpire.

The ground was broken on the 14th inst. for the New-York, Providence, and Boston Railroad, in presence of the Governors of Connecticut and Rhode-Island, and about 1500 ladies and gentlemen, who partook of a dinner provided by the Company.

Mr. Sullivan in further reply to Mercator.

[Communicated for the American Railroad Journal.]

Mr. Editor,—It may be some excuse for the protracted length of this discussion, that it is defensive.

In offering a specification to your columns, I intended to enregister a very obvious device among the many useful things in which they already abound: and I am led to perceive it to be of some importance by the opinion of one of our most eminent Engineers, Maj. Wilson, as expressed in his report on the proposed railroad between Philadelphia and Baltimore, that timber is the best material for our country to use at this period.

Hence it must be important to protect or defend the most exposed parts of the structure against causes of early decay—the effects of the weather.

The question is whether Hydraulic and Roman cement are pervious to water, when practically and skilfully applied?

It is not indeed a matter of quite so much importance as the cement of the Union, though relating to one of its bonds, commercial roads.

The question Mercator has raised however relates only to one of my expedients, offered to notice in your paper of the 6th July: that of surrounding the posts or piles when used to support a railway. at the surface of the ground and a little above and below it, with fragments of stone cemented together and to the post. The other relates to the protection of the upper surface of the bearing timber by a resinous coating, to fill cracks and keep off the rain; and by hardening the surface under the iron-way by *driven nails*, preventing the rails from indenting the timber, and making lodgements for water.

The former is called in question on the ground that lime, hydraulic lime, and Roman cement, will not keep off the water, but be a conductor of it to the wood.

The former I did not contemplate using. unless in combination with tar or pitch. He rests his assertion that the last mentioned cements, commonly considered impervious, will, when made into balls and placed in a dish of water, absorb it by capillary attraction, and therefore transmit it to the post.

The absorption of water by the balls of cement mentioned may be accounted for in the supposition that they do not undergo any pressure, and when the water contained in them evaporates, they are left with interstices among the particles, which are of course filled with air, and which gives place to the water as high as they are immersed, and it is very possible they may exhibit its wetness higher.

But if Mercator's *discovery*, that these cements are conductors of water, is sound, we must ask him to account on some new principle for their preventing the passage of water when practically applied? If it will reach wood through it, why not stone, and why not every surface of stone in a lock wall? If it does not transmit water thus, there is no reason to suppose it will when properly worked and applied around posts.

His objection to pitch was that its duration on a ship's bottom does not exceed three months. Although I do not subscribe to this, yet, were it so, it is accounted for by the action to which it is in that situation subjected. We know that even copper sheathing will wear out.

But Mercator accuses me of "*coining*" expressions for him, and then calling them absurd. This would indeed be very absurd. I perceive that, in writing a hasty reply, it was addressed rather to the spirit, than the letter, of his animadversion. I certainly did not intend to misrepresent him, in return for his courtesy in coupling *common lime* mortar and cellar air with my very different location and purpose.

He had just been speaking of *pitch* as lasting but a short time under water, and why? because either worn off or penetrated by it. He then speaks of *lime*, water lime, and roman cement—all three as being conductors of water by capillary attraction. And I perceive, as he says, that I coupled *pitch with Roman cement*, as being *absurdly* said by him to be conductors of water.

It is true this was an inadvertency, which required to be set right, but does not require that I should retract my opinion of the absurdity of attributing the opposite properties in Roman cement of being a *conductor*, and yet a *defence* against water. If he had said it also of pitch, it would not have been more so.

As to pitch, Mercator says, (page 498, 4th paragraph,) "He well knows that a coating of pitch is impervious to water."

Of course he knows it is *adhesive*, and the inference is certainly very rational, that, if applied hot to the dry surface of a post, it would keep off water.

And if in order to keep off the heat also, a cemented mass of stone surrounds it, can it be correctly denied that this part of the post will be defended effectually?

But he doubts whether pitch in this situation would last longer than on a ship's bottom, and yet it is not pervious to water. Is it a perishable material? Is it not principally carbon; and is not charcoal imperishable?

If lime is mixt with it, the effect is to neutralize the acid of the wood, and check the decay of the surface. I believe this part of the post thus defended, instead of being the earliest, would be found the last to decay.

It appears to me there are three conditions of timber, in which their duration may be very long: perfect dryness—constant immersion in water—and by the effect of great heat (as steam) and of poison, as corrosive sublimate, according to late experiments in England, destroying the vitality of the albuminous principle within.

But all that an architect or engineer can do, perhaps on a large scale, is to prevent partial and premature decay where exposed to *concurrent causes* thereof.

The instance of dry rot alluded to in a ship at Baltimore is quite a different case, proving only that when a merchant, instead of keeping his ship's frame *cool with salt*, shuts in with *varnish* the natural dampness of the juices of the wood, and, in a hot situation, he should expect premature decay, or dry rot.

I hope, Sir, your readers will recollect that I proposed no permanent impossible preservation, but, by a very easy precaution, to prolong the duration of timber railroads perhaps three or four times as many years as they would otherwise last. But that I do not recommend timber in preference to stone, when at command. Duration is of consequence, not only as regards the cost, repairs and renovation, but as relates to the interruption of the route, and the tolls that can be afforded.

Another good effect of my mode of protecting the surface, by forming a hard bed for the rail, is not only that the resinous defence will remain, but that the rail, by not giving way under the wheel, will not as at present oppose additional resistance to the moving power.

I will only add, in conclusion, that there is a manifest advantage in a fictitious signature. It permits a writer to be unphilosophical without injury to the reputation of his understanding. He may assert absurdities without responsibility. He may pervert the meaning of the writer assailed, and give him the trouble of following wherever he may please to lead. Or if the assailed party is absent, or too much engaged to reply, an unfavorable impression of his improvement may be unjustly made.

I think an editor of a scientific journal should make this distinction: Anonymous disquisitions may be received, but not *marked* attacks of any invention with which a name is associated, because in this way you close your columns against those who, in their confidence of this degree of protection, commit their views of usefulness to your channel of communication with the public.

If a writer gives his signature, it is a proof of his sincerity and good intentions: both parties are then on a footing, and each will be responsible for his arguments and sentiments. I am respectfully, yours,

J. L. Sullivan.

On the Construction of Curves for Arches. By Van De Graaff. [For the American Railroad Journal.]

There is, perhaps, in the whole art of building, no subject which requires the exercise of more mathematical learning, than the construction of arches in equilibrio. And those who are unacquainted with the principles of statics, cannot but see with surprize the great deviation from a state of equilibrium produced by a small variation in the curvature of an arch. An example of this important fact may be given in the curves of a common and semi-cubical parabola: for to equilibrate the former, as uniform vertical pressure is required through the whole length, and yet, with regard to the latter, an infinite pressure is required at the crown to produce equilibrium. So great is the difference in the condition of equilibrium in those two curves; and hence is shown the importance of having judicious curvatures in the arches of aqueducts and bridges.

In the construction of flat arches the oval is usually taken as a substitute for the true ellipse; and, therefore, when such arches are equilibrated upon the supposition of an elliptical curve, it is necessary that the oval should coincide very nearly with it.

The ovals usually constructed with three centres are without the true semi-ellipse at the flanks, which are the weakest points; and they should, for that reason, not be used in the construction of arches, unless the span be very small. However, as the use of three centres has the advantage of simplicity, and may do for small spans, I will give a method of describing such an oval, which will meet the true ellipse at the flanks, and differ less from it at all other points, than by the method now in common use. It is not necessary to give a detail of the whole investigation. Take the rise of the arch as unity, and let a denote the semi-transverse, R the radius of the smaller arc, whose centre is in the transverse, R′ that of the greater arc, whose centre is in the conjugate axis. Compute the value of R from the following cubic:

$$R^3 - R^2 \times \Big\{ \frac{a^2+1}{a} + 1 \Big\} + R \times \Big\{ \frac{\overline{a \times 1}}{2a} \Big|^2 + \frac{a^2+1}{a} + 1 \Big\} - \frac{a^2+1}{a} = 0;$$

find the value of R′ from the formula,

$$R' = R + \frac{R\times\overline{a-R}\times\overline{a^2-1}}{2a-R\times\overline{a^2+1}}$$

aving obtained the values of R and R′, the ition of the three centres will of course be en ; and a straight line passing through se centres will give the meeting point of the s composing the required arch. A refe-nce to the following table will save all the uble of computation ; it is calculated from above expressions, and by taking propor- al parts, it will serve for any span and ht which may be required :

	R	R′	a	R	R′
0	1.0000	1.0000	1.30	0.8304	1:5652
0	0.9347	1.1763	1.35	0.8085	1.6698
5	0.9057	1.2688	1.40	0.7879	1.7772
0	0.8788	1.3645	1.45	0.7685	1.8873
5	0.8538	1.4635	1.50	0.7500	2.0000

xample : Let the span of an arch be 30 , and the rise 10 feet : to find the radii of vature for three centres. Here, $a = \frac{15}{10} =$; and hence 10 × .7500 = 7.5 feet, and 10 .0000 = 20 feet, are the radii required.

But it is to be observed, that an oval describ- l with three centres can have no point giving true *normal* to the elliptical curve, excepting e springing points and crown ; and the same ing is true when five centres are used. *The ast number of centres which can be judicious- used in substituting an oval for an elliptical ch, is seven.* Such an oval may have one int in each flank giving a true *normal*. With even centres two normals may be obtained, d with fifteen centres three normals can be d, and so on for any number. There is no antage in using the intermediate numbers 9, 13, &c. *The oval usually given with even centres contains no one point having a e normal to the elliptical curve*, with the ex- ptions above mentioned.

By using seven centres with a correct *nor- l in each flank*, an oval will be had, which proaches so exceedingly near to the true el- e that it may be very safely equilibrated for t curve. I have investigated several methods determining the position of those centres, the radii of curvature of the arcs. That ich seems to be the most expeditious, is the lowing :

Let a denote the semi-transverse ; b the semi- njugate ; m the given normal, whose position ould be such as the eccentricity of the oval ll require ; p and q the corresponding co-or- ates, whose origin is at the vertex of the i-transverse ; n the sub-normal ; f the an- formed by the curve and the ordinate q.

t $k = \frac{m}{n}\times\overline{a-p-n}$, and $s = \frac{q}{n}\times\overline{a-p-n}$.

From known methods, the following expres- n for the angle f is readily obtained by tak- g radius unity :

$$\text{Tan.} f = \frac{p.\,\overline{2a-p}}{q.\,\overline{a-p}}$$

Let e denote the complement of f ; and com- ute the values of two angles, z and u, from e following equations :

1st. To find z,

$$-\frac{\frac{2ab^2}{a^2-b^2}}{\frac{a^2+b^2}{a^2-b^2}+Cos\ z} - \frac{n+p-m}{2\sin\frac{1}{2}f}\times\frac{Cos.\frac{1}{2}(f+z)}{\sin\frac{1}{2}z} = o;$$

2d. To find u,

$$\frac{n+k-b-s}{2\sin\frac{1}{2}e}\times\frac{Cos.\frac{1}{2}(e+u)}{\sin\frac{1}{2}u} - \frac{\frac{2ba^2}{a^2-b^2}}{\frac{a^2+b^2}{a^2-b^2}-Cos.\ u}$$

$$+ m + k = o.$$

The formulas for the radii of curvature of he arcs are then the following :

$$1.\ R' = \frac{\frac{2ab^2}{a^2-b^2}}{\frac{a^2+b^2}{a^2-b^2}+Cos.\ z}$$

$$2.\ R' = R + \overline{n+p-R}\times\frac{\sin f}{\sin(f-z)}$$

$$3.\ R''' = \frac{\frac{2ba^2}{a^2-b^2}}{\frac{a^2+b^2}{a^2-b^2}-Cos.\ u}$$

$$4.\ R'' = R''' - \overline{R'''-b-s}\times\frac{Cos.\ f}{Cos.\,(f+u)}$$

In the above expressions, R denotes the radius of the arc whose centre is in the transverse axis of the arch ; and the number of degrees in this arc is expressed by the angle z. The quantity R‴ is the radius of the arc whose centre is in the conjugate axis produced if necessary ; and the number of degrees in that arc is expressed by the angle $2u$. The radii R′ and R″ belong to the two arcs whose centres are in the given normal produced ; R′ being the smaller, and R″ the greater. The number of degrees in the first of these two arcs will be expressed by $f-z$; and the second by $e-u$. This furnishes data for an easy computation of the whole length of the arch and of each constituent arc.

When an arch is to be made with a view of sustaining the weight of a heavy embankment, it presents the following problem to those who direct the construction : To determine an arch which will be equilibrated with sufficient security by means of the superincumbent weight, and whose voussoirs may be cut normal to the curve without subjecting the workmen to needless liability to error from a complicated manner of construction. Supposing the road-way to be horizontal, or nearly so, the curve of strict mathematical equilibrium will be difficult to construct. I will, therefore, give a method of computing the ratio of the axes of an ellipsis, and their actual values, such that a segment will coincide with the arch of true equilibrium very nearly ; and such a segment, being of easy practical construction, should always be preferred to the semi-circle under heavy embankments ; for thus, much of the masonry usually required about such arches will be saved, and a more secure equilibrium obtained.

Let p denote the rise and q the half span of the required arch ; h the height of embankment upon the crown ; r the thickness of the arch, or length of the voussoirs ; c the specific gravity of the embankment ; c' the specific gravity of the materials composing the arch. The following expressions for the values of the semi-axes of the required ellipse may then be had from an investigation conducted upon received principles of statics :

1st. To find the semi-transverse :

$$a = \tfrac{1}{3}p \times \frac{\left\{\frac{c'.\overline{3r+p}+3ch}{3c'r+3ch}\right\}^{\frac{1}{3}}}{\left\{\frac{c'.\overline{3r+p}+3ch}{3c'r+3ch}\right\}^{\frac{1}{3}}-1};$$

2d. To find the semi-conjugate :

$$b = \frac{aq}{\overline{p.\overline{2a-p}}|^{\frac{1}{2}}}$$

Hence is demonstrated the following

Theorem : An arch of given rise and span having to sustain in equilibrio a given superincumbent weight with a horizontal top surface : I say, an ellipsis may always be found, of which the required arch will be a segment very nearly.

In the construction of aqueducts and bridges the *segments of circles* are frequently used for arches, without any regard to their *equilibration*. Such an arch would instantly fall when the centering is removed, if it were not for the adhesion of the cement and superincumbent matter. But an arch properly equilibrated, *agreeably to the above theorem*, will still have those advantages, and the work will, in consequence, be perfectly secure.

The method of tracing such an elliptical segment will be obvious from the preceding remarks. Two of the four formulas, marked 1, 2, 3, 4, will apply to this case when three centres only are used ; the last two when the transverse axis is horizontal, and the first two when that axis is vertical. When seven centres are taken, one true normal may be introduced into each flank of the *segment*, and then the formulas just mentioned will give only two of the radii. The other two radii will in this case be different ; but the investigation is not difficult, and I cannot pursue that subject further in the present number of this Journal.

The mathematical principles of inverted arches should be understood by practical men. A scientific article upon that subject, accompanied with plain practical results, and communicated to the public through the medium of this Journal, would, perhaps, be useful to those engaged in the construction of such works.

V. D. G.

Lexington, Ky., August 1, 1833.

South Carolina Railroad.—We have frequently published accounts and descriptions of this railroad, but nothing has hitherto reached us which gives, in so small a compass, so correct an idea of the work as the following description by Mr. Dexter, one of the resident engineers. We give it entire, together with his detailed account of its cost, that those who are not familiar with that mode of construction of railroads may be enabled to form a good idea of its cost, as they will undoubtedly soon hear of the wonderful facilities which it will afford to the inhabitants in its vicinity, and of the greatly enhanced value of property on its line, as well as at its extreme points. It is not saying too much, and we have no fears of contradiction, when we say that the *value* of property, within five miles of the road, has increased already *more than the road has cost;* and we hesitate not to say that the increased value for five years to come will be greater than for the same period past, even if the railroad should not extend beyond the limits of South Carolina ; but we should be unwilling to believe that those who have done so much for the State, by their devotion to this important work, will now rest easy. They who saw so clearly the importance of such a work to arrest the evils which the mode of cultivating the soil at tho South has brought upon them, will surely not be satisfied now they have so nearly accomplished their *first* grand object, to rest easy while so much is yet to be done. The *South Carolina Railroad will be continued into Tennessee*, if not, *also*, through the *northern part of Georgia into Alabama*. There are serious natural obstructions to encounter in passing the mountains, there is no doubt ; but, in comparison with the importance to the improvement of the country of such a channel of communication, these difficulties dwindle into insignificance. The great mass of the people are becoming enlightened upon the subject—they begin to see, that in no other manner can they do so much to promote their own interest, and at the same time that of the community at large, as by contributing to works of easy and rapid internal communication. They find that their own profits are greatly enhanced in value—in proportion, indeed, to their distance from market, and their proximity to the improvement. Under the influence of such a state of things there cannot be a doubt of the continuance of such a work as the Charleston and Augusta Railroad.

The city of Charleston has felt too sensibly already the beneficial influence of her Railroad and Steam Packets, to rest short of a free and cheap mode of communicating with the fertile country so near her, which has no other seaport so convenient, or so accessible, when a railroad shall have been constructed over the mountain.

The route will probably be up the Saluda and then down the French Broad and the Holston rivers to Knoxville, or up the Savannah, Tugaloo, and Turroree rivers, and down the south branch of the Tennessee—both of which routes pass through a corner of North Carolina, and the latter one through a corner of Georgia, also. With such an improvement as this, and others in various directions, which will naturally follow as a matter of course, CHARLESTON may look forward to a degree of prosperity which she has never known. She may well anticipate becoming *one* of the most, if not the *most*, important Southern sea-port of the Union, except New-Orleans. In such an event, what will be the value of the present work to its stockholders? If it is now, when not entirely completed, worth 10 or 12 per cent. above par, may we not safely calculate upon its reaching 100 per cent. above par in five years?

It is true we know very little about stock, but if we had the means of purchasing, we know of no other which we should be more willing to hold, as their charter is, we believe, perpetual, and for 35 years they have the entire control, or monopoly, of railroads in that section of the state, as well as the privilege of regulating their own charges on freight, whilst the rate for passengers is fixed at five cents per mile.

By a reference to page 179, volume I, of the Railroad Journal, an interesting communication will be found from Henry N. Cruger and Horatio Allen, Esqs., relative to the construction of this contemplated Railroad, which terminates very appropriately and truly, as follows, viz.: "This great work will assuredly be one day accomplished. Its seed is now in the ground—already the resources of the country are adequate to its easy maturity. The *only* question is whether *we*, our *children*, or *the stranger*, shall reap its benefits."

GENERAL DESCRIPTION.—We will preface our description with the remark, that in the establishment of a Railroad through a well timbered country, like that through which this road passes, there can be no doubt of the judicious economy of the general plan of pile construction, which has been adopted in preference to the expensive system of embankments which prevails at the north. Besides the increase in the first cost, the expense of keeping the embankments in repair, owing to the injuries sustained from settlings, washes, slides, derangement of culverts, &c. is unquestionably greater than that attending the occasional renewal of decayed timbers.

The profile of the South Carolina Railroad, embracing, generally, a remarkably uniform surface of country, may be compared to that of a continued bridge, sometimes resting on the earth, but generally elevated above the soil about five or six feet.

The road extending from the city of Charleston to Hamburgh, is 135 miles in length; and the rails were laid in continued line complete, about the 1st of June, 26 months from the period when the whole line was located and put under contract. A few miles of the road, near Charleston, were made, and in use with hand cars, about two years prior to this period.

The road crosses the Edisto river about 400 yards below the junction of the North and South Fork, 65 miles from Charleston, after passing over, in that distance, six difficult streams and depressions, Saw Mill Creek, Cypress Swamp, Four Hole River, Indian Fields, Poke Swamp, and Cattle Creek. The road continues its course on the dividing ridge between the Edisto and the branches of the Savannah, passing nine miles to the north of Barnwell village, until it reaches the head of the valley of Wise's Creek, a branch of Big Horse Creek.

At this point, which is only 21 miles south of Edgefield Court House, the road attains its highest altitude of 510 feet above the level at Charleston, and 360 feet above the Augusta bridge, 16 miles distant. One hundred and eighty feet of this descent to the valley of the Savannah is conquered at this point by an inclined plane, 3,800 feet long, having three grades of ascent, the steepest of which is one to thirteen.

From the foot of the plane the remainder of the descent is overcome in 10 miles, having an average inclination of 18 feet in a mile.

At Hamburgh two spacious depositories are in course of construction, of brick, with zinc roofs, on a commodious lot of six acres, gratuitously bestowed on the Company by Henry Shultz, Esq.

There is only one bridge of importance on the whole route—that crossing the Edisto river—which is 400 feet long, has a single arch over the main stream of 66 feet span, and cost $1,800.

The road is a single track, except at the inclined plane, where there is one mile of double road, and at the turn outs and depositories about three miles more.

Two stationary engines, which work on the same crank, of about 25 horse power each, now erected at the head of the inclined plane, and nearly in readiness for operation, will effect the passage of loaded trains and passenger cars over the plane at the rate of about ten miles an hour.

The 7th Residency, embracing the distance of 15 miles from the foot of the inclined plane to Hamburgh, was much the most difficult and expensive part of the road—a more costly plan of construction being frequently necessary, owing to the badness of the foundation and the height of the work. The excavation of this road cost nearly $1,000 per mile, while that of the rest of the road will not average $300 per mile. The high price of materials was one great cause of the increased expense of this section.

The profile of the South Carolina Railroad is remarkably favorable, as the entire length of inclination, as great as 1 in 150, or 35 feet in a mile, is but $1\frac{5}{8}$ miles, the occasional ascents not exceeding 1 in 200, or 26 feet in a mile.

The straight lines, with the exception of the 7th Residency, are generally uncommonly long, and the curves easy. There is one straight line 25 miles in length, and several courses of from 6 to 10 miles. The first 65 miles from Charleston varies in length but half a mile from a uniformly straight line.

The road is now ironed a distance of 100 miles from Charleston, to which point the steam-engines have frequently passed. All the iron would have been on, and the road in complete operation, but for unexpected delay in the arrival of the locomotive engines, three of which, contracted to be delivered in Charleston by the 1st of March last, have not yet arrived. The engines in use do not afford sufficient power to transport the iron for the road, and at the same time comply with their mail and passenger arrangements, and the public convenience in the constant carriage of freight.

Two of the engines now in use are built on an entirely novel plan, according to the instructions of H. Allen, Esq., Chief Engineer of this road. They are supported upon eight wheels, by which means the weight is diffused, and a more powerful engine is obtained with the same stress upon the road.

This engine, however, is more complicated in its construction, and more liable to derangement, than a four wheeled engine, and therefore at present less generally approved—but it is to be hoped that the few practical difficulties which attend the use of an engine so well adopted to powerful transportation, in this and other which may be built on a similar plan, ma nish before superior skill and experience.

When in order, these engines, for a miles, detached from their train, have freq ly attained a speed of 40 miles, and in on two instances of more than 50 miles per h These engines will carry 30 tons of frei besides passengers, with ease 15 miles an h at a cost of about $20 per day, including al penses of fuel, attendance, and wear and of engine. The Phœnix, a light engine on wheels, has twice run from Charleston, a tance of 72 miles, to Midway and back, in day, a distance of 144 miles, placing it, th fore, beyond a doubt, that the travel from gusta to Charleston can be effected in 10 12 hours.

If the engines which have so long disapp ed us should arrive in the course of this m the whole road can be in use by the 15th of September. The 15 miles from Hamb to the foot of the inclined plane, is ironed, used with hand cars. The mail is now c 105 miles on the road.

DETAILS OF CONSTRUCTION.—There are different plans of construction made use o this road, the adoption of which was deter ed by the character of the soil and the heig the line of grade: these are, the Sleeper No. 1—the Sleeper Plan No. 2—the Pile struction, and the Truss Work.

Sleeper Plan No. 1.—The Sleeper Pla 1, which is a very cheap construction, an well on a good clay or gravel foundation. this construction, the rails, 6 by 10, are ported on transverse sills, 10 by 12, laid si a half feet apart; these sills are ten feet of good lightwood or heart pine, well he In trimming up the excavations and be and preparing the side drains, enough ear obtained to cover the transverse sills enti and afford a solid bearing to the whole le of the rail. Most of our road on this pla been built by contract, for $1,450 per mile—t excavation, draining, and filling in, not inclu ed. We have about five miles of this road.

Sleeper Plan No. 2.—This plan likewise used in excavation, and forms an admira structure, preferable to the other, in being l liable to settling and lateral derangement. this case, the size of the rail and distance ap of the supports remain the same. The ca into which the rails are let a depth of thr inches, and secured by wedges, as before, a 6 by 9, and 9 feet long, fastened down at ea end by a two-inch trenail to a longitudinal which is firmly bedded to nearly its full d in the ground.

These longitudinal sills are put three fe from the centre of the road, each way, whi brings them nearly on a line, under the rail The size never was allowed to be less than by 9, generally well hewed in the upper a lower surfaces, and blocked off on the edg It is better to jog the caps into the sills by gain in the latter, and use a wedge in prefere to the trenail, as the pin hole admits water engenders decay.

On this plan the inclined plane is built, b the lower sills are 12 by 12—all heart of t best pitch pine, well hewed on all sides, and t ends lapped.

The average cost of work on this constr tion, is about the same with that of piling the same grade—from $1,800 to $2,200 p mile. There are about 28 miles built on plan in the whole road.

One considerable advantage attending plan of construction is the facility of repa it, and renewing the decayed supports. other important consideration is, that ti will last longer horizontally placed than v cally—as in the Pile Construction.

Pile Construction.—In this construction posts are generally of lightwood or of the h of the pine tree, round, with the butt end in earth, and from 10 to 15 inches in diam The posts are in no case allowed to be l than 4 feet in the ground—6 feet apart

, by 6½ feet longitudinally. Where the is soft the piles are sometimes driven to of 25 feet—the distance in the earth ntirely governed by the descent, under weight, at the last blow of the hammer. weight of the hammer used varied from 1000 lbs. The best piling machines 5 feet in height, fixed on large wooden with moveable ears for disconnecting n block, at different heights, secured by nd nuts to the uprights. Under a ham- 900 lbs. with a clear fall of 20 feet at the ow, the pile was allowed to sink two . As the success of the road in a great re depended on the stability of the piles, tent testers, under the pay of the Compa- mpelled by their presence the faithful ex- n of this important part of the work.

s were generally dug about 3½ feet deep e soil before the pile was introduced, by of *tongs*—a kind of double spade, made purpose. In hard soil this previous dig- a great saving in expense, and by allow- e pile to be introduced with nearly its full t the end, is a material aid to its perma- .

e piles, after being sawed off and tenanted e true and even line of graduation estab- by the levels of the engineer, are con- d transversely by caps 9 feet long, 6 by 9. e are mortised and draw-bored on to the

e rails, 6 by 10, and never less than three hes, or 19½ feet in length, are let into the three inches, and secured by wedges dri- n the inside of the rail in each cap. About an inch is taken off the inner sides of the by a chamfer four inches deep, to a line hich the edges of the iron plates are laid, sely five feet apart across the road, in the . Great care is necessary that the top ce of the rail be perfectly smooth and uni- , so as to afford the iron a solid bearing.

he confidence which the projectors and ad- tes of the pile construction felt in predict- he economy and stability of the plan, is en- justified by the result. So far the settling e road, even in parts which have been in four years, is confined to a few points, and the introduction of a few additional sup- remedies the evil. Not the slightest yield servable in any part of the road where the ng was properly attended to.

he cost of our pile construction has been $1900 to $3000 per mile, averaging t $2300, the bracing being extra. The machines, with blocks and gearing, are shed to the contractors by the company, expense of about $100 for each complete.

e have some pile construction 15 feet in ht—strengthened by outside braces, sup- d against short piles driven about 8 feet the road on each side of the main track.

bracing is requisite where the height is r 7 feet, if the soil be firm. From 7 to 10 one brace of 4 by 5 scantling between each of posts is sufficient. Above 10 feet, two s between each pair of posts, placed some- in the shape of a letter X, are introduced. e mile of single bracing, average height, about $150: of double bracing, $400.

uss construction.—Where the bottom is and the work over 12 feet in height, the construction is advisable.

foundation must be made of piles, well n, supporting a large bottom sill, 12 by hich may be embanked to the top, or a dation of transverse and longitudinal sills, y imbedded in a solid sand embankment, be used. This last plan we have fre- tly had occasion to adopt in the 7th resi- y. Four posts, 8 by 10, making something shape of an inverted W, connected at the y a cap 10 by 12, are mortised into the bot- sill 12 by 12. The trusses or bents may t 12 or 13 feet apart, when the size of the should be 12 by 12. Ten feet apart with 9 by 12, is a convenient distance. The of this construction, the solidity and gth of which has given great satisfaction, is very variable, depending on the difficulty of the foundation, the price of materials, and the height of the work. It varies from $6,000 to $10,000 per mile. There is one connected piece of road on this plan, almost half a mile in length, the height of which is from 18 to 25 feet. There is, altogether, about 5 miles of the truss construction.

The Iron.—The iron plates used on this road are 2¼ inches wide, ½ inch thick, and in length from 10 to 15 feet, secured to the rails by spikes 5 inches long, the heads of which fall into a countersink below the level of the surface. A mile of road requires 17 tons of this iron, costing something like $45 per ton landed in Charleston. Spikes cost about 9 cents per lb. or $90 to the mile.

17 tons of iron at $45	$765 00
1000 lbs. of spikes at 9 cts.	90 00
Transportation from Charleston along the line, on an average, including steamboat freight of 20 miles of iron to Augusta;	100 00
	$955 00

After the top surface is prepared the iron can be laid on the road, and spiked down at $25 per mile. Iron ¾ of an inch thick, having a rectangular flange on one side, to project down on the inner edge of the rail, about ½ inch, would have been greatly preferable to that used, in preserving a rigid uniformity of top surface, and lessening lateral friction on the wheel of the locomotive. The use of iron of this description was strongly recommended by the chief engineer, but was not adopted, from considerations of economy. The increased cost of using iron ¾ of an inch thick, with a flange ⅜ of an inch in thickness, would not exceed $200 per mile, while it would be of incalculable benefit in promoting the successful running of the engines.

Turn outs or passing places.—A turn out or passing place, about 600 feet in length, the centre of which is 30 feet distant from the main track, into which it curves easily, at each end, is placed at every 7 miles along the road. Here is the well and wood station, supplying the engine with fuel and water. We seldom have to dig more than 15 feet for water, and wood is obtained in abundance at from $1 25 to $1 50 per cord. Our turn outs leave the main track in a curve of 772 feet radius.

At each end of the turn out, about 20 feet of the railway is detached, and made to turn at pleasure on vertical hinges, from the general track into the sideling; and the old plan of switches, always liable to derangement, is entirely dispensed with.

The transportation may hereafter require intervening turn outs between those already established, but by this means the necessity of a double road may be entirely obviated.

Turn outs are built complete at 50 cents per lineal foot—iron work not included.

A revolving platform is generally placed in the centre of the turn out, by which means a loaded car can be taken in a few minutes off the main track, or a rectangular road, into the depository.

EXCAVATION.—The greater part of the excavation on the South Carolina Railroad has been shallow, the deepest cut not exceeding 25 feet. In proportion to the depth the excavation has been expensive—the soil, though a loose sand on the top, generally changed, at from one to two feet in depth, to a very solid red and yellow clay. Most of this excavation was done by contract, at 10 cents per cubic yard, although the actual cost to the contractors was, perhaps, 14 cents per yard.

The section of the cutting is 16 feet wide on the bottom, with slopes forming an angle of 45 degrees with the horizon.

Where the soil is very solid, and the cutting under 10 feet, the slopes will stand very well at as great an angle as 67½ degrees with the horizon.

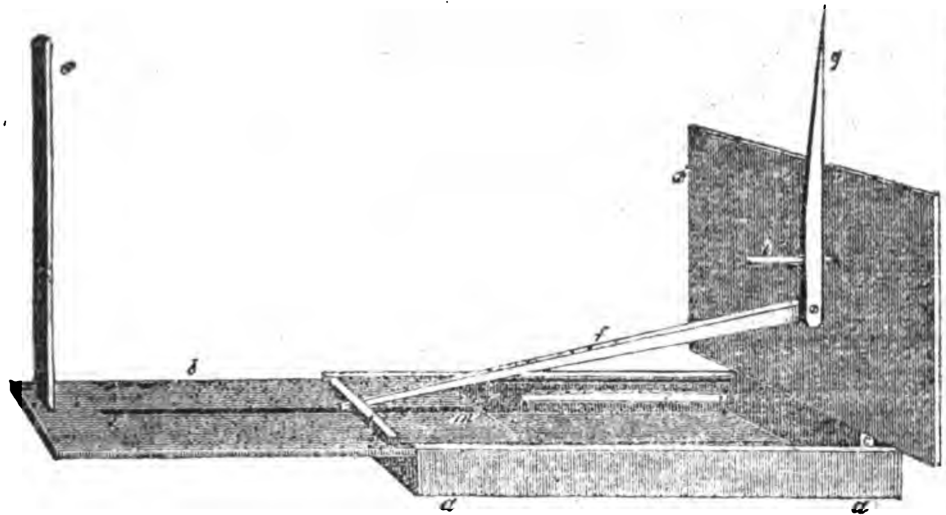
About one-fifth part of the whole line is constructed in excavation.

In the 16 feet on the bottom of the excavation, there is room left in each side of the road, which occupies but 9 feet, for lateral drains, which are important auxiliaries in carrying off the water, and maintaining solidity of foundation.

There is about 500,000 cubic yards of excavation, and about 20,000 cubic yards of embankment, in the whole line. The entire road could not have been embanked, in the general plan of the northern roads, short of $400,000, full 75 per cent. of which would have been *extra over the cost of the present road*, as the sleeper construction, which is necessary where the embankments are made, costs nearly as much per mile as the average pile construction.

ESTIMATE OF THE COST.—We have no correct data before us on which to base an accurate statement of the cost, but the following will be an approximate estimate:

135 miles of road, including all expense of preliminary surveys, of locomotive engines, cars, depositories, inclined plane and stationary engine, expense of engineer department, general superintendence, land purchases, negroes, &c. all complete at $6,700	$904,500 00
Of this sum, we will say, for the repository in Charleston, and land purchased with view to future use of timber, and increased value	12,000 00
For negro labor and mechanics	6,600 00
For the inclined plane with double road, truss work, and 25,000 yards of embankment and excavation, and half a mile extra double road	20 000 00
Stationary engine at inclined plane, and all fixtures complete	10,000 00
Seven locomotive engines delivered on the road, $6000 each	42,000 00
Ten freight cars, at $120 each, and four passenger cars at $425 each, to an engine, equals 2900 × 7	20,300 00
Pile gearing and ram block and tools and machinery on hand	5,000 00
Surveying, superintendence, engineer department, &c.	53,000 00
Iron and spikes, $132,580—transportation of the same, $13,500	146,350 00
Expense of workshops in Charleston, deducting worth of cars and carriages made	16,000 00
Excavation $45,000—embankment $1,800—Edisto bridge $1,800	48,600 00
Crossing of Horse Creek $500—culverts $100—road and plantation bridges $2,000	2,600 00
Ditches under the road at entrance into fields	1,000 00
Expense of pitching 70 miles of road with tar and turpentine	4,900 00
Extra expenditure in making a more substantial road than contemplated in the original plan, by truss work in high grades and bad foundations	35,000 00
Bracing and other extra work	25,000 00
Damage sustained by avalanchefrom a side hill near Hamburgh	500 00
Draining and filling in excavations	8,000 00
Opening the tracks 200 feet wide through the forest, and burning undergrowth	6,000 00
Twenty turn outs with water stations, revolving platforms, &c. $500 each	10,000 00
Depositories with rectangular tracks, workshops, offices, &c.	11,000 00
Repairs on the part of the road in use, equal to 40 miles for one year at $75	3,000 00
Police on do. and expense of running locomotives, &c.	8,000 00
Wood construction of 134 miles, and all other expenses at $3,057 8-100 per mile	409,649 00
Total cost	$904,499 00



Machine for making Drawings of Landscapes. [Communicated by G. Lansing, for the Mechanics' Magazine.]

Dear Sir—I enclose you a drawing of a little machine I have invented for making drawings of landscapes, buildings, machinery, &c., of which the following is a description: *a a* is a box, say nine inches long, three wide, and three quarters of an inch deep, in every way similar to a water color box; *b* is the lid, or top, made to slide in or out at pleasure.

On the inside of the box, towards the right of the drawing, are screwed two supports, *c c*, which can be raised up or turned down; these are to be turned up when in use, to support the drawing-board (to which the paper is fixed) in a vertical position. On the end of the slide is placed an upright piece, half as high again as the drawing board, *d*, near the top of which is a small hole, *e*, for the eye to look through.

The next thing to be described is the apparatus for drawing, which is made of two pieces of wood, *f g*, say 12 or 13 inches long—*f* to be three-quarters of an inch wide, and one-quarter thick; *g* the same width, but thicker, lapping together at *h*, and fastened by a small screw, thereby forming a joint, that must work easy, but true. The piece *g* is brought to a point at the top, and also to an edge on the side, towards *d*, and has at the lower end, two and a half inches from the bottom, a hole to admit a pencil, *i*.

On the piece *f* is a cross bar, *k*, of lead, three inches long, and weighing three or four ounces—it having a pin on the under side, working very loosely in a slit, *l m*, in the lid or slide of the box, the object of which is to keep the point, *g*, in a vertical position.

In using this machine, (supposing the drawing-board to be a foot wide,) the eye must be at least ten and a half inches from the board, *d;* for if it be nearer, the boundary of view at the sides will subtend an angle too large for the eye to take in without straining, and will cause the outward parts of the drawing to have a disagreeable appearance. To avoid this, it will be necessary to draw the slide *b*, till it be fourteen and a half inches from *d*, and the whole view above *d* will not subtend an angle above forty-five degrees, which will give a more pleasing view to the eye and picture.

Whatever width you intend your picture to be, the distance from the eye should be in proportion—as twelve is to the width, so fourteen and a half to the distance from the eye,

Now, having adjusted the machine as above, you will begin by placing your eye at the hole *e;* take hold of the pencil, and bring the point of *g* to that part of the object where you wish to begin, (which will seem to touch the object itself); gently pressing the pencil, *g*, against the board, *d*, follow the outline of the distant object with the point, *g*, and you will find a correct outline on the paper fixed on *d*. The piece containing the eye-hole should be made to take out, when not in use, and inclosed in the box with the rest of the apparatus, when it may be carried in the pocket. A portfolio, or the cover of a book, may be substituted for the board *d*.

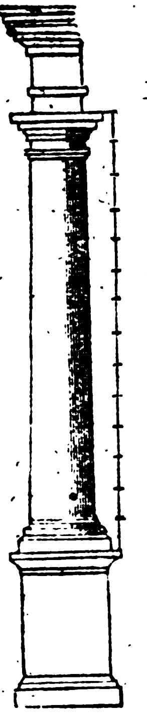
This machine I have had in use for some years, and believe it to be entirely original—it is at least with me. I have not applied for a patent, nor shall I. I shall think myself sufficiently rewarded in finding it of use to my fellow artists and mechanics.

Should you think it worthy of a place in your useful Magazine, you will oblige yours, &c. G. Lansing, Engraver.

Equality of Mankind.—All civil distinctions disappear before a thing being. He sees the same passions, the same ideas, pervade the mind of the peer and the peasant; a gloss only is discernible in the language and appearance of the one, which the other does not possess. If any difference distinguishes them, it is to the advantage of him who wears the mask. The people show themselves as they are and they are not amiable; the great know the necessity of disguising themselves; were they to exhibit themselves as they are, they would excite horror.—[Swift.]

Of the Orders of Architecture.—We have already stated (see page —) that the orders as now executed are five in number, viz. the Tuscan, Doric, Ionic, Corinthian, and Composite; the first and last of which are Roman, and the others Greek. These orders are chiefly distinguished from each other by the *column* with its *base* and *capital*, and by the *entablature*.*

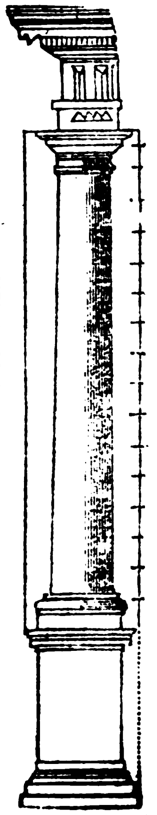
Tuscan Order.—The title of this order leads us to assign its origin to Tuscany, in Italy; and this conjecture is strengthened by the inhabitants of that country being admitted to be the offspring of the *Dorians*.



The Tuscan order is c racterized by its plain and bust appearance, and is the fore used only in works wh strength and plainness are quired : it has been used w great effect and elegance that durable monument of cient grandeur, Trajan's C lumn, at Rome. But the be modern example of this ord is St. Paul's Church, Cove Garden, London.

No ancient remains of th order having been discover with *entablatures*, it is on from the accounts given b Vitruvius, that the form a ratio of its members can b determined; he allows *sev* *diameters* for the *height* of th *columns*, and diminishes th upper part one fourth of h the diameter; the *base* is ha a diameter in height, one h of which is given to a circul *plinth*, and the other to a *rus;** the *capital* is also hal diameter in height, and one in breadth up the *abacus;*† the height is divided into thr parts, one of which is given to the *abac* one to the *echinus*, and the third to the *h* *potrachelian* and *apophygis;* the *architra* has two faces, with an aperture betwee them of about an inch and a half, for the admission of air to preserve the beams; the lower face is vertical upon the edge of the top of the column; the *frieze* is plain and flat; the *mutules*, or ornamental parts of the *cornice*, project over the beams, equal to one fourth of the height of the column.

Doric Order.—This is the most ancient of the five orders, and while employed by the Greeks, was without a base; the surface of its shaft is usually found worked into twenty very flat flutes, meeting each other at an edge, which is sometimes a little rounded; the upper member of the capital is a square abacus or thin plinth, under which is a large and elegantly formed ovolo, with a great projection; immediately under the ovolo, there are three fillets or annulets, which project from the continued line of the under part of the ovolo, and have equally recessed spaces between them; the flutings of the column are terminated by the under side of the last of these three fillets, and either partly or entirely in a plane at right angles with the axis of the column.



The *architrave* is composed of one vertical face, with a band or fillet at its upper edge; to the under side of this band are suspended a small fillet and conical drops, or *guttæ*, which, for their position, are dependent upon the ordinance of the frieze.

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* The Entablature is an ornament or assemblage of parts, supported by a column over the capital: each order of columns has a peculiar entablature divided into three principal parts, the architrave, frieze, and cornice, (see p. 281.)

* A *torus* or tore is a large semi-circular moulding, used in the base of a column.

† The *abacus* is the upper member of a column, which serves as a covering to the capital.

The *frieze* consists of rectangular projections and recesses placed alternately. The height of each projection or tablet is rather more than its breadth.

The recesses are either perfectly or nearly square. The tablets are each cut vertically into two angular channels, with two half ones on the extreme edges; each channel is formed by two planes meeting at its bottom at a right angle, and each forming an angle of 135° with the face of the tablet.

The upper ends of the channels are terminated in various forms; the tablets are, from their channelings, named triglyphs; in a direction immediately under each triglyph, and equal to its breadth, a small fillet is attached to the lower side of the architrave crowning band, and from it depend six guttæ or drops, which are generally the *frustra*, or lower parts of cones, with their bases downwards, tho' they are sometimes of a cylindrical shape.

The square spaces in the frieze between the triglyphs, are named metopes, and are frequently decorated with sculptures.

The *cornice* is strongly marked by a corona of great projection, forming a very distinct separation between its upper and lower parts; and by having, below the corona, and immediately over the triglyphs, blocks, named mutules, which also project considerably, and have the plane of their soffits with an inclination from their roofs towards the horizon, and these have likewise guttæ or drops depending from their soffits.

The established proportions for the construction of the Doric order are the following. Considering the diameter that of a circle, at the lower end of a shaft, the column is six diameters in height. The thickness of the upper end of the shaft is three-fourths of the lower, or it diminishes one-fourth of the diameter.

The height of the capital is half a diameter. That of the ovolo, with the annulets, and that of the abacus, are each one quarter of the upper diameter. The annulets are one-fifth of one of the parts. The horizontal dimensions of each face of the abacus is six times its height. The entablature is divided into four equal parts; the upper one is the height of the cornice; the remaining ones are divided equally between the architrave and frieze. The inner edge of the angular triglyph is placed in a vertical line with the axis ot the column. The height of the triglyph is divided into five equal parts; three of these parts give the distance of its returning face, and determine also that of the *epistyle*, and consequently include the breadth of the triglyph. The height of the capital of the triglyph is one-seventh of its whole height, and the capital of the metope one-ninth. The breadth of the triglyph is divided into nine equal parts, giving two to each *glyph*, one to each semi-glyph, and one to each of the three inter-glyphs.

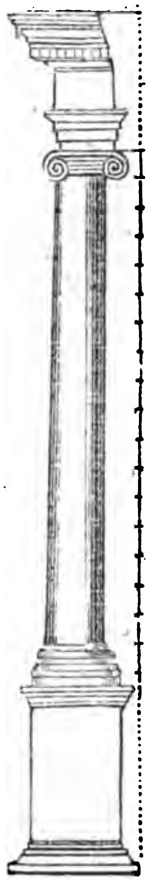
The metopes are square. The height of the cornice is divided into five equal parts; the lower is given to the fillet, the mutules, and drops; the next two to the corona; and the remaining two parts are subdivided and disposed among the members.

The projection of the cornice is equal to its height; it is divided into four equal parts, giving three to the projection of the corona.

The number of annulets in the capital vary from three to five; and the number of horizontal grooves, which separate the shaft from the capital, vary from one to three.

In the application of the Doric order to temples, the shafts of the columns are generally placed upon three steps, which are not proportioned like those in a common stair, but to the magnitude of the edifice.

Ionic Order.—The origin of the Ionic Order is problematical. Vitruvius reports it to have been made in representation of the curls in the head-dress of females; but other hints are quite as probable, such as the spiral shape of the horns of rams, or that assumed by the barks of some trees, when dried in the sun, or the beautiful spiral forms of some sea shells.*



In the *architrave* and *frieze* of this order, all appearances of triglyphs and guttæ are omitted; and in the *cornice*, instead of the bold mutules of the Doric order, the ends of smaller pieces of wood, to which the covering-tiles were fixed, are represented by what are termed dentils, or teeth. This order differs also from the Doric, by having a *base* at the lower extremity of the shaft; the propriety of this might have arisen from the diameter of the shaft being much less than that of the Doric, in proportion to the height of the order, or the weight it had to sustain.

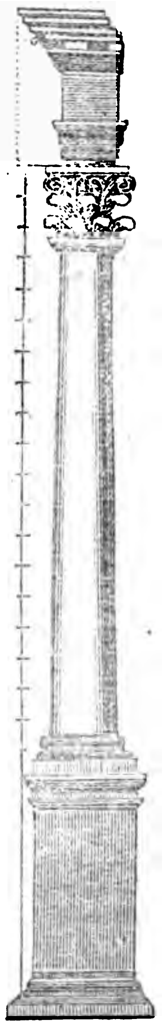
The rest of the Ionic order is not so precisely defined, nor so uniformly adhered to, as similar parts of the Doric.

In all the Greek Ionics, the height of the cornice, measured from the lower edge of the corona upwards, appears to have a constant ratio to the total height of the entablature, viz. nearly as 2 to 9, which seems the true one to accord with the character of the order. The great recess of mouldings, under the corona, gives it a striking prominence, and prevents the cornice from appearing too heavy, tho' both the dentile band and *cymatium* of the frieze are introduced under it. On account of the frieze being wanting in most of the Asiatic remains, although the architrave and cornice have been accurately measured, the height of the entablature cannot be ascertained. The only instance in which a frieze has been discovered is in the theatre of Laodicea; and there it is rather less than one-fifth of the entablature. In the temple of Bacchus at Zeos, and Minerva Polias at Priene, the architraves are divided into three facæ below the cymatium. Their proportions are very different from those at Athens, though also elegant in character and effect.

The *height* of the Ionic columns was originally *eight* diameters, taken at the bottom; but the moderns have increased it to *nine*.

The shaft is generally cut into 24 flutes, with as many fillets. The altitude of the entablature may, in general, be two diameters; but it may be increased, and should not be less than one-fourth of the height of the column in works of magnificence.

It is said that the temple of Diana at Ephesus, the most celebrated edifice of all antiquity, was of this order. At present it is much used in churches, courts of justice, and buildings connected with the arts of peace.



Corinthian Order.—This order is said to have been introduced in the fourth century before the Christian era, by Scopas, who employed it in the upper range of columns in the ancient temple of Minerva, at Tega.—Vitruvius, however, ascribes the invention of the Corinthian capital to Callimachus, who is said to have been an Athenian sculptor, contemporary with Phidias, about 540 B. C.

In all the examples of Stuart's Athens, this order has an attic base; the upper fillet of the trochilus or scotia projects as far as the upper torus.

Vitruvius observes that the shaft has the same proportions as the Ionic, except the difference that arose from the greater height of the capital, it being a whole diameter, whereas the Ionic is only two-thirds of it. But this column, including the base and capital, has, by the moderns, been increased to *ten* diameters in height. If the entablature is enriched, the shaft should be fluted. The number of flutes and fillets are generally 24; and frequently the lower one-third of the height has cables or reeds, husks, spirally twisted ribbands, or some sort of flowers, inserted on them.

The great distinguishing feature of this order is its *capital*, which has for 2000 years been acknowledged the greatest ornament of this school of architecture. The height is *one* diameter of the column, to which the moderns have added *one-sixth* more.—The body, or nucleus, is in the shape of a bell, basket, or vase, crowned with a quadrilateral abacus, with concave sides, each diagonal of which is equal to two diameters of the column. The lower part of the capital consists of two rows of leaves, eight in each row; one of the upper leaves fronting each side of the abacus. The height of each row is one-seventh, and that of the abacus one-eighth, of the whole height of the capital. The space which remains between the upper leaves and the abacus is occupied by little stalks, or slender caulicolæ, which spring from between every two leaves in the upper row, and proceed to the corners, and also to the middle of the abacus, where they are formed into delicate volutes. The sides of the abacus are moulded, and the curves of the sides are continued until they meet in a sharp horn or point. In the attic capital, the small divisions of the leaves were pointed in imitation of the acanthus. In Italy they most generally resembl olive.

It may be observed generally, in th

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* This part of the order is called the *volute*, and forms the principal characteristic and ornament of the Ionic Order. It is also used in the Composite Order.

Corinthian, that the volutes terminate in a point in the natural spiral, without either coiling round a circular eye, or bending backwards in a serpentine form, as in most of the Roman specimens.

This order seems never to have been much employed in Greece before the time of the Roman conquest; but this powerful people employed it almost exclusively in every part of their extensive empire; and it is accordingly in edifices constructed under their influence, that the most perfect specimens are found.

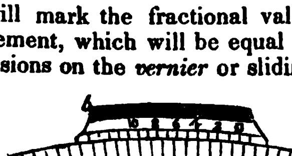
Of the celebrated modern architects who have treated of this order, Palladio makes the column 9½ diameters high, one-fifth of which he gives to the entablature, consisting of a cornice with modillions and dentils, a flat frieze, and an architrave with three faciæ, divided by astragals; the base is attic. The design of Scammozzi bears a general resemblance to that of Palladio, but his column has ten diameters in its altitude; his entablature is one-fifth of this height; the cornice has modillions, the architrave consists of three faciæ, divided by astragals, and the base is attic. Serlio, following Vitruvius, has given this order an Ionic entablature, with dentils, and the same proportion of the capital; his column is nine diameters high, and has a Corinthian base. Vignola's Corinthian is a grand and beautiful composition, chiefly imitative of the three columns. He makes the column ten diameters and a half in height; the entablature is a fourth of that altitude; the cornice has modillions and dentils, the frieze is plain, the architrave of three faciæ, divided by mouldings, and the base is attic.

Sir William Chambers has observed, that "the Corinthian order is proper for all buildings where elegance, gaiety, and magnificence, are required. The ancients employed it in temples dedicated to Venus, Flora, Proserpine, and the nymphs of fountains; because the flowers, foliage, and volutes, with which it is adorned, seemed well adapted to the delicacy and elegance of such deities."

On the Vernier Scale.—The method of dividing what is termed a vernier scale is founded on the difference of two approximating scales, one of which is moveable and the other fixed.

Thus, if a given space on the limb of an instrument be divided into any number of equal parts, and an equal space on an attached moveable scale be divided into *one more* part, it is evident that each of them will be smaller than the former, by that part of one division into which this attached sliding scale is divided.

Therefore, on shifting the attached scale forward, the quantity of aberration, or difference, will diminish at each successive division, till a new coincidence again takes place, and then the number of divisions on the sliding scale will mark the fractional value of the displacement, which will be equal to one of the divisions on the *vernier* or sliding scale.



Thus, in the annexed figure, *nine* divisions of the primary, or fixed scale, *a*, occupy a space equal to ten on the sliding scale, *b*, and the moveable *zero* stands beyond the thirty-eighth and thirty-ninth division; therefore, to find how much more than one whole division is indicated by the vernier, it is only necessary to observe where the opposite sections or lines on the scales coincide, which, in this instance, is opposite to the fourth division of the vernier, or sliding scale. The whole quantity is therefore 38·1.

It is evident that any *fractional* part of a whole division, on a primary or fixed scale, must bear the same proportion to an equal space on the vernier as a *whole* division, or the space occupied by the whole divisions of the vernier.

Hence, one division of the vernier is always equal in value to the quotient of the smallest division on the primary scale, divided by the number of divisions on the vernier.

Thus, suppose one degree on the limb of a Hadley's quadrant to be divided into three equal parts, and that the attached vernier is divided into twenty equal parts: then one division on the vernier indicates one minute, for the third part of a degree is twenty minutes, which, divided by *twenty*, the number of divisions on the vernier, quotes *one* minute.

Hence, we have the following simple rule for ascertaining the value of one division of any vernier, attached to a primary scale.

Find the value of the smallest division on the primary scale, and divide this value by the number of divisions on the vernier, and the quotient will be the value of one division on the vernier of the same denomination, as that to which the smallest on the primary scale was reduced, previous to dividing by the divisions on the vernier.

Chloride of Lime and Pulmonary Complaints.

[From the New-England Farmer.]

The following communication and certificate annexed afford a fair promise of a specific against one of the most formidable and obstinate of all the diseases to which mankind are liable.

Mr. Editor—I hope you will not think me guilty of flattery when I speak of the value to myself and the public of your interesting Journal. You publish experiments upon the human system of gentlemen of high respectability, as well as essays, &c. on agriculture. On reading the experiments so very interesting in pulmonary complaints by Dr. Cotteren (N. E. Farmer, Vol. XI, No. 19, page 147,) in Paris, France, on patients afflicted with consumption, I ventured to try the experiment of inhaling the gaseous perfume of chlorate of lime on a young man, a nephew to my wife, whose certificate accompanies this communication, and which I took myself; after his health had so improved as to visit me, (a ride of five miles.) He is about twenty-five years of age, of steady habits, and industrious. I visited him after he had been sick 5 or 6 weeks, and thought him not so sick as I expected to find him, although much reduced. I returned home in hopes I should hear he was better, but every day brought tidings of his growing worse. A second physician was called, a gentleman of eminence in his profession: I saw him, who informed me he feared his case was doubtful. Some of my family visited him, the answer was he grew worse, was wasting very fast, and according to human view was rapidly approaching the close of life. All this time the article above alluded to never entered my mind, till the young man was in the last stages of a consumption. One Sabbath evening, after retiring, not having much inclination to sleep, I was thinking of this distressed family: Dr. Cotteren's experiment darted into my mind. The next morning I spoke of it in my family—my oldest son (who had witnessed the surprising effect which chloride of lime had upon the corpse of a young man who had been dead four days, and brought almost sixty miles in a waggon over a rough road in a new country, one year ago in June last,) was very urgent for the application to his cousin. It was procured by sending four miles; my son went with it, and administered it, watching through the night. Neither of us possessing any medical knowledge, I advised him to use it with caution, and at first there was no apparatus used. Some was prepared by putting a quarter of a pound into a junk bottle, filling the bottle with soft water, shaking it a little, letting it stand till settled, pouring it into a saucer, and to a gill adding half as much vinegar, when it is then fit for use. The saucer was placed near the bed; finding no unpleasant sensations it was put near to his mouth and nose, advising the sick man to shut his mouth and inhale the fumes through the proper orifice to the lungs. A free use was made of it all the night; the liquid in a vessel was rather inconvenient, a rag was wet, he said he received it stronger from the rag than any other way. My son left him in the morning more comfortable than he had been for several days. The use of it was continued, and the sick man's health improved, to the astonishment of all who saw him. The above, together with the certificate, are the facts as they took place; and the young man's health has improved so much in the short space of time, that he is able to transact business, and do some labor every day, at the date of this communication.

I hope that a further trial will be made by those afflicted with disordered lungs and the result published, as the ingredient is so cheap, and the application so simple and easy, and it is obtainable by every person in every situation of life. I hope that this case may be published in every Journal, as there was no other medicine used and the effect was so salutary. Yours, respectfully,

James Walker.

Fryeburg, Me., Aug. 3, 1833.

Certificate.—I hereby certify that I was taken sick the sixth day of April, 1833, with an inflammatory fever, as my physician called it. My complaint was a pain in the left side, in the greatest extreme, which caused an inflammation on my lungs, which, of course, ulcerated, attended with a distressing cough, which brought up the matter that had suppurated upon my lungs in such quantities that I was almost strangled by the discharge. I was sick nearly three months; was so much reduced that I could not sit in a chair without being supported by one person, while another made my bed. I called a second physician, who met my former doctor; they examined my case and considered it doubtful. I followed the direction of both the gentlemen, but my lungs were so diseased that I grew worse every day. My case was now considered hopeless. My doctor told me he could do no more for me. At this stage of my disorder I was advised by my uncle Walker to inhale the fume of chloride of lime, which I did, and received immediate relief. About the 25th of June, when I was at the lowest, some days I brought up more than two quarts of matter from my lungs in the course of 24 hours; but after inhaling the fume of the lime a short space my cough abated, and I ceased to bring up the matter from my lungs as I had done before. I never brought up any but once after inhaling the lime; my health improved much faster than I could expect. In six days I could walk about the room; the ninth I walked out of doors; the twelfth I rode a mile on horseback, and now my health is fast improving. I made use of no other kind of medicine whatever.

CALEB WARREN, JR.

Denmark, Me., July 13, 1833.

List of New English Patents. [From the Repertory of Patent Inventions.]

Archibald Douglass, of Manchester, in the county of Lancaster, manufacturer, for certain improvements on power looms, and the shuttles used therein—dated April 30, 1833.

Charles Collinge, of No. 22, Bridge Road, Lambeth, in the county of Surrey, engineer, for an improvement or improvements in the making or manufacture of axle-trees—dated May 2, 1833.

John Holmes, of Birmingham, in the county of Warwick, engineer, for an improvement in metallic shanks for buttons—dated May 4, 1833.

James Fraser, of Bevis Marks, Saint Mary Axe, in the city of London, engineer, for certain improvements in steam boilers, and in the arrangement of the machinery attached thereto, as applicable to land carriages—dated May 7, 1833.

Thomas Spinney, of Cheltenham, in the county of Gloucester, gas engineer, of "a new combination of materials for the manufacture of crucibles, melting pots, and fire bricks"—dated May 11, 1833.

Louis Paul Lefort, late of Grand Couroune, near Rouen, France, but now residing in Cornhill, in the city of London, merchant, for certain improvements in machinery or apparatus for making or manufacturing lace, commonly called bobbin net. Communicated by a foreigner—dated May 22, 1833.

James Noble, of Little Horton, in the parish of Bradford, in the West Riding of the county of York, worsted spinner, for a machine for combing wool and other fibrous materials—dated April 25, 1833.

Christopher Robinson, of Athlone, in the county of Roscommon, in Ireland, for certain new or improved machinery for transferring caloric from aeriaform or fluid bodies to other bodies of the like description, and applicable to other useful purposes—dated May 2, 1833.

Henry Jones and Thomas Jones, both of Marple, in the county of Chester, weavers, for a certain method of expanding or stretching cloth, and keeping it even during the process of weaving, and of preserving the selvages thereof—dated May 4, 1833.

William Norvell, of the town and county of Newcastle-upon-Tyne, engineer, for an improvement of the machinery now in use for making strands from the yarns, and laying ropes by such machinery, at one and the same time—dated May 7, 1833.

William Graham, jr., of the city of Glasgow, cotton spinner and power loom manufacturer, for a self-acting temple to be used in the operations of weaving by power or hand loom. Communicated by a foreigner—dated May 22, 8133.

PREMIUM WINE.—At the second fair of the Georgia Agricultural Society, the wine that obtained the premium was made of grapes from a seedling vine of a very flourishing growth.

Patent granted to David Redmund, London, for Improvements in the Steam Engine. [From the Repertory of Patent Inventions.]

This invention has to do with the boiler only. It is portable, and intended to suit any fire-place that it might be applied to in domestic or other purposes. It consists of a series of chambers exposed to the action of heat by a corresponding series of flues.

The chambers are made of rolled copper or other suitable metal. The side pieces are formed into semi-circular half tubes, separated from each other by sharp doublings of the metal, so as to present alternate semi-circles and acute angles in the edge. Resting on the frame, it appears to be supported by so many arches, which give it strength and solidity. These side pieces are so constructed that the points of one shall meet the centres of the semi-circle in the other: the ends of these side pieces being made to overlap each other from the ends of the chambers.

The top is of rolled metal, and hollowed, or channelled, or fluted, as the side pieces; the bottom is of cast metal and troughed out in a corresponding manner. When two of these chambers are placed together, the semi-circular flutings form complete tubes, and while the chambers have direct access to the supply of water, and unite in a common egress for the escape of steam, the tubes or flues have a similar communication with the source of heat, and its circulation is similarly promoted.

The whole is fixed in a very strong case of iron for the prevention of accidents, and the increase of heat. The patentee prefers a fire, the bars of which are semi-cylindrical tubes.

The claim is made for the boiler as above described.

[*From the Albany Argus.*]

DEPOSITE OF THE CHENANGO CANAL FUND.—Yesterday was the day specified in the Comptroller's advertisement, for opening the proposals for the deposite of the money loaned for the construction of the Chenange canal. The following offers for the deposite were received, viz:

From the Madison County Bank, Cazenovia, for either 40 or $50,000, an interest at the rate of 4 per cent. per annum.

From the Broome County Bank, Binghamton, for $50,000, an interest at the rate of 4 3-4 per cent.

From the Canal Bank of Albany, for $40,000, at 4 1-2 per cent., and for $50,000, at 4 3-4 per cent.

From the Ontario Branch Bank, Utica, for the whole sum, $90,000, or either sum separately, 5 per cent. per annum.

From the Merchants' & Mechanics' Bank of Troy, for $40,000, at 5 per cent., and for $50,000, at 5 3-8 per cent.

The terms offered by the Merchants' & Mechanics' Bank of Troy, being, for the whole sum, the most favorable to the interests of the fund, the Commissioners of the Canal Fund determined to give the deposite, $90,000, to that bank.

The deposite of the amount of the premium, $15,000, obtained on the $100,000 loaned for the Chenango Canal, was given a few weeks since to the Ontario Br. Bank, at an interest of 5 per cent. per annum: The act for the construction of the canal, requiring that all premiums obtained upon the stock issued, should be deposited in some bank, and not be drawn upon, except to pay the interest upon the money borrowed.

The deposite given yesterday to the Merchants' & Mechanics' Bank of Troy, and for which an interest of 5 and 5 3-8 per cent. is paid quarterly, is made on condition that the principal is to be drawn for as the same may be wanted for the construction of the Chenango canal.

Rideau Canal.—A correspondent of the Commercial Advertiser, who dates from "Lake Ontario," after giving a description of the Rideau Canal, which, in connexion with lakes and rivers, forms a water communication, navigable by steamboats, between Kingston and Montreal, a distance of 270 miles, adds;

From what I have seen and heard, I am fully of the opinion that unless the state of New York reduces the Canal toll greatly on all produce coming to the sea-board markets, the internal communication in the Canadas will be the means of drawing a very considerable portion of your western produce to Montreal. While I was there a considerable quantity came in direct from Ohio, via the Welland Canal; and I understood that the importation this year had increased, in the article of flour, over one hundred per cent.; and on most articles exceeded fifty per cent. This ought to be looked to in season, before the trade is diverted. The present situation of the canal fund, will certainly enable the state to make a large reduction from the present tariff.

Utica and Schenectady Railroad.—We learn that the Chancellor yesterday informed the counsel for both parties, that the injunction against the Commissioners, which had been applied for by Thomas R. Walker, would be denied: And that at the opening of the court on Tuesday next, he should be prepared to give his reasons at length upon most, if not all, of the questions which had been discussed on the argument. The election for directors will of course be held this day, pursuant to notice.—[Albany Argus of Saturday.]

A few days since, two cars laden with bricks, weighing altogether more than *eight tons*, were taken by one horse, the whole length of the Westchester railroad, three miles of which have a grade of forty feet in the mile. On an ordinary road, this weight would have required about sixteen horses.

We are informed that the stockholders of the Port Kent Railroad assembled at Keeseville on the 14th instant, and made choice of the following Directors:

Elkanah Watson, Richard Keese, Aaron Ward, Josiah Fisk, Charles M. Watson, Peter Comstock, Robert Gilchrist, John Townsend, William L. Strong, Ezra Williams, Richard P. Hart, David Milligan, Oliver D. Peabody.

We understand, says the Albany Evening Journal, that the following gentlemen were, this day, elected Directors of the Schenectady and Utica Railroad:

Utica.—Alfred Munson, Nicholas Devereaux, Henry Seymour.

Herkimer.—Nathaniel S. Benton.

Montgomery.—T. A. Stoutenburgh.

Schenectady.—Alonzo C. Paige.

Albany.—John Townsend, Lewis Benedict, Erastus Corning, James Porter.

Dutchess.—James Hooker.

New-York.—John Mason, Churchill C. Cambreleng.

To the Editor of the American Railroad Journal:

SIR,—Could you not, consistent with your arrangements, insert in your next number the truly eloquent Address of Judge Story on the Consecration of the Auburn Cemetery, the description of which appeared in your last Journal. I file your paper, and should wish to preserve an effusion which does so much credit to the Christian and accomplished scholar. By so doing, you will oblige more than

ONE SUBSCRIBER.

August 19, 1833.

We should be happy to comply with the above request, but are unable so to do, as we were obliged to return it to *case*, being in want of the *letter*; not, however, until we had printed it in three different shapes, to wit: in the New-York Farmer, New-York American, and *Mechanics' Magazine*—for the last of which we had it *stereotyped*. It will be found, with many other interesting articles, in the Mechanics' Magazine, No. 7, for July, or in the New-York Farmer, No. 8, for August.

NEW-YORK AMERICAN.

AUGUST 17, 19, 20, 21, 22, 23—1833.

LITERARY NOTICES.

The Posthumous Works of the late Rt. Rev. John Henry Hobart, D. D. *Bishop of the Protestant Episcopal Church of N. Y. with a Memoir of his Life; by the* Rev. Wm. Berrian, D. D., *Rector of Trinity Church, New York.* 3 vols. 8vo. N. Y. *Swords, Stanford & Co.*—Although three years have elapsed since death snatched from the midst of us one for whom—to judge from his unbroken frame of body and of mind, his incessant activity and energy, and his yet fresh and ardent feelings—many years of most honorable and successful exertion in the holiest of vocations, seemed still in reserve,—the name of Bishop Hobart is never yet pronounced without awakening anew those deep regrets, and that sense of individual bereavement, which his too early fate called forth in almost every member of his congregation throughout this wide-spread diocese. Though later, therefore, than originally contemplated by his biographer, this Memoir of the Life of Bishop Hobart, and the two accompanying volumes of his Sermons, are yet in time to operate upon the sympathies which his loss excited in so remarkable a degree. They will be welcome to the members of the communion of which he was so able and loved a chief—they should be welcome to all, of whatever communion, who know how to honor truth, earnestness, ability, and, above all, fearlessness in the fulfilment of the duties of a Soldier of the Cross. Dr. Berrian's Memoir aims not to produce effect by any elaborate eulogy, or swelling periods. It is an honest narrative of a life and career which could not be commemorated with tinsel ornament, without impairing their truth and effect. It is a frank exposition of the character of one who was himself frank, almost to a fault; who was, indeed, ever too much in earnest to be otherwise than frank: and we offer our thanks to the reverend author of the Memoir for thus preparing it. He has, too, we think, in the account which it was indispensable for him to give, of some of the leading controversies in which the Bishop was engaged, acquitted himself with fairness to all parties, siding, as from his association and well-known opinions, it was matter of course he should do, with the Bishop, but not stating the less impartially the arguments of his opponents. There is, however, want of method and arrangement in the Memoir, especially as to the manner of introducing some of the foreign correspondence of the Bishop; which is interspersed without any order or connection, and frequently to the interruption of the course of the narrative. We have not room for many extracts, but we cannot refuse to ourselves, and to the many warm friends of the Rev. Cornelius R. Duffie, too early lost to them and to the Church, the pleasure of making public a letter from him to the Bishop, which we find in the Memoir. Those who knew Mr. Duffie, will see in this letter the purity, gentleness, and sincerity, which made up the loveliness of his character. The object of this letter is explained by its import.

"*New-York, October* 10, 1821.

"Right Rev. Sir—I come to give you notice of my desire to present myself as a candidate for holy orders, and of my readiness to enter upon such preparatory exercises as you may appoint.

"If the time of life at which I have arrived is not without disadvantages, I believe it has brought a due sense of the responsibility of the sacred office, and of the importance of deliberating well before it is assumed. I hope I have not deceived myself in judging of the motives which govern me; but lest I may have overlooked any objection to the reasonableness of my intention, or to the prospect of my usefulness, I submit my purpose, with entire deference, to your consideration and revision.

"I cannot, however, avoid perceiving that the events of my life for some time past, and the dispositions they have produced in my mind, tend strongly to point out the path I have chosen; and as far as these may be regarded as indications proceeding from the Spirit of God, I am compelled, though it be with apprehension and self-distrust, to allow their influence.

"A few years of practical acquaintance with the world, by showing me that fortune and the fairest prospects were often vain and deceptive, and that even success and prosperity were less to be desired than feared for their tendency to make men forgetful of themselves, had forced upon me a sober, and perhaps a severe estimate of life. But that last and most overwhelming of all earthly bereavements which I have recently suffered, has made me feel the uncertain tenure even of the most cherished and valued happiness, and by disconnecting me in a great measure from the ordinary motives to exertion, has taken from me all inclination or ability for mere worldly pursuits.

"It is now not less necessary to my health and tranquility, than to my sense of duty, that I should place before me some great and useful object, in the prosecution of which I may occupy my time and my thoughts; and I am confirmed in believing the one which I have now in view to be that to which, in the providence of God, I am called, because in no other can I be sure of the permanent approbation of my own mind, or find motives sufficiently powerful to excite its exertions.

"If you, Right Rev. Sir, shall approve my decision, my former habits of study will be revived and pursued with a dilligence proportioned to the importance of their object; and though I do not expect by these means to escape from the recollections which depress me, yet I hope they will become less painful by being improved to the same great purpose.

"My highest wishes will be gratified, if I shall be able to fill up the residue of my life in the conscientious endeavour to incite all within my power to the love and service of Him who has ever continued to me the conviction and acknowledgment of his infinite wisdom and goodness; and who has made me to see and to know that in the Gospel of Jesus Christ there is unfailing support under all the circumstances in life, as well as abounding consolation and triumph or the mortal hour.

"I beg you to excuse the details of motives and views into which this letter has extended, but which I thought necessary, to enable you to come to a proper determination upon the subject of it.—With perfect respect, I am, Right Rev. Sir, your most obedient servant, Cornelius R. Duffie."

We make only one more extract, and that one tending to set the character of the Bishop forth in a point of view, which to us always rendered it so attractive—a scorn of all compromise or equivocation, when truth and character were concerned.

The annual Convention of the diocese was held shortly after his return [from Europe.] The feelings of the clergy and laity from all parts of the State were in unison with those which prevailed in the city, and there was therefore a general desire to make a public demonstration of them on this interesting occasion. But though there were none who did not wish to unite in this testimony of gratitude for the happy return of the Bishop, yet there were a few who, not agreeing with him in some of his opinions, and in the main points of his policy, were anxious that the resolutions should be so framed as merely to express their sentiments of personal attachment and respect, and their high sense of his usefulness, piety, and worth.—With a view, therefore, to render it an unanimous act, some of his friends, who agreed with him in all points, unhappily yielded to this consideration, and in a spirit of accommodation, as unusual as it was unwise, drew them up in such a vague and general form as deprived them of all the force, character, and value which could make them worthy of his acceptance. The Bishop had met his clergy and people with a generous warmth, which was most cordially reciprocated. He knew that, with very few exceptions, they were *of one heart and one soul.* He knew on what accounts he was particularly distinguished and esteemed. Any good and amiable prelate, however weak, irresolute and wavering, might have received this praise, and therefore, on the day after the resolutions were adopted, he rose in his place, and in the bitterness of a jealous and wounded affection rejected it with scorn. Never did I hear any person, in voice, manner, or expression, so eloquent. It was all nature, feeling, and passion, wrought up to the highest pitch. He represented this proceeding as a crafty device of his opposers, and an act of weak compliance on the part of his friends. Under the appearance of congratulation and praise, it left out all those notices of the characteristic and prominent points in his principles and policy which it had been the labours of his life to extend, through *good and evil report*, and in which he placed his glory and his pride. It neither exhibited him as he was known at home, not as he was valued abroad. It was not agreeable to the just and affectionate tribute which had been presented to him on his departure, nor was it the kind of commendation which he coveted on his return. It was a diluted and weakened praise, which was in no way applicable to one who had always stemmed the current of popular opinion, and he therefore requested that the resolution should be expunged from the minutes.

This is the mere faint and imperfect recollection of a speech which was so bold and powerful, as to bow the hearts of the whole assembly as of one man. The justness and force of it were in the main universally felt. The particular friends of the Bishop were grieved at the pain which they had given him, and mortified by the error into which they had fallen. The resolutions were modified in such a way as to give them an appropriate character; and this fearless vindication of his fame, so far from being regarded as a display of arrogance and pride, was only considered as a proof of that elevation of mind which glories in an honorable course, rather than in undistinguishing and popular applause.

The Daughter's Own Book; *or Practical Hints from a Father to a Daughter.* 1 vol. Boston, Lilly, Wait, Colman & Holden.—We find a great many things in this pretty volume to approve—none absolutely to disapprove; but some to doubt about. We doubt, for instance, whether the recommendations which regard reading, society, and amusements, be not too *strait-laced*—whether they do not inhibit enjoyments which are not morally wrong and do not necessarily lead to moral wrong, and without which it *may* be, that this would be but a sour and austere world to the young; and such a world, it may be humbly assumed, it was not by its beneficent Creator intended to be. We speak with hesitation, for we know how difficult it is to mark the line when amusement ceases to be properly allowable: yet we speak with some confidence, too, when we say, that virtually to proscribe from a course of reading for females, all dramatic writers, even Shakspeare, and from their amusement, all dancing, except with their own sex, and that in private, is to deprive them of rational and harmless sources of instruction and recreation. From the chapter on conversation, we make a long extract; for we think it inculcates happily the principles and the restraints which should govern that inestimable privilege:

Let me caution you to beware of talking too much. If you do not talk to the purpose, the less you say the better; but even if you do, and if withal, you are gifted with the best powers of conversation, it will be wise for you to guard against the imputation of excessive loquacity. I would not, by any means, have you yield to a prudish reserve; but I know not whether that were a more offensive extreme than to monopolize the conversation of a whole circle. You are to remember that as the gift of speech is common to all, so there are few who are not inclined to use it; and it is a rare case indeed, that you will meet with an individual who will feel satisfied to sit down and hear another talk continually, and have the conversation addressed to himself, without bearing any part in it. But, at any rate, you are never to make yourself very conspicuous in conversation, without due regard to circumstances. If, for instance, you are among persons who are your superiors in age or standing in society, there must be strong circumstances to justify you in bearing more than a moderate share in the conversation. And if you should actually take the lead in it, let it appear manifest that it is not because you are predisposed to do so, but because it is the wish of others that you should. If you talk out of proportion to your relative circumstances, even though it should be to the amusement or edification of those who listen, it is more than probable that it will be set down to the score of vanity. It were far better to leave a circle, wishing, from what you have actually said, that you had said more, than out of patience with you for having talked so much.

It is only an extension of the thought to which I have just adverted when I remark further, that you should beware of talking without reflection, or when you have nothing to say. It is far better to be silent than to talk in this manner, or in these circumstances; for you cannot hope to edify any one, and you certainly expose yourself. Let the subject be what it may, accustom yourself always to reflect before you speak; in other words, to have thoughts before you utter them. You cannot look around in society, without perceiving that incautious speaking is one of the most fruitful sources of mischief. Whether you are discussing a grave subject, or talking about the most familiar occurrences of life, let it be a rule from which you never deviate to say nothing without reflection. You may easily form this habit, and the advantage of it will be incalculable; or you may perhaps, with still greater ease, form the opposite habit, and it will not improbably subject you to serious evils as long as you live.

Take care that you never subject yourself to the charge of egotism. This is apt to be a consequence of excessive garrulity; for there are few persons who talk a great deal, that do not find it convenient to magnify their own importance. And let me say that this is a foible which is more likely to escape the observation of the person who is subject to it than almost any other; and yet there is perhaps no other which by every one else is more easily detected; and, I may add, none which excites more universal disgust. Guard your lips, then, whenever you find it in your heart to make yourself the heroine of your own story. Never say any thing of yourself which even indirectly involves commendation, unless under circumstances of very rare occurrence. If you watch the operations of your heart, you will probably be surprised to find how strong is the propensity to bring one's self into view, as often and to as great advantage as possible. Whenever you can illustrate any subject on which you may be conversing by a reference to the experience of any one else, it is better, in all ordinary cases, to avail yourself of it, than to refer even indirectly to your own. I have known some persons, who have manifested a strange kind of egotism, in speaking freely and unnecessarily of their own past errors; when it appeared to me that genuine humility should have led them to silent repentance. You may rest assured that it is an exceedingly difficult thing to allude much either to one's own faults or excellencies; difficult, I mean, without leaving an impression that it is the offspring of a foolish self-complacency; in other words, without getting, and deservedly getting, the character of an egotist.

Avoid even the appearance of pedantry. If you are conversing with persons of very limited attainments, you will make yourself far more acceptable as well as useful to them, by accommodating yourself to their capacities, than by compelling them to listen to what they cannot understand. I do not say that you may not in some instances make them stare at your supposed wisdom, and perhaps they may even quote you as an oracle of learning; but it is much more probable that even they will smile at such an exhibition as a contemptible weakness. With the intelligent and discerning, this effect certainly will be produced; and that whether your pretensions to learning are well founded or not: the simple fact that you aim to appear learned, that you deal much in allusions to the classics or the various departments of science, with an evident intention to display your familiarity with them, will be more intolerable than even absolute ignorance. If you are really a proficient in science or literature, you need have no apprehension that your acquisitions will not be known without your making a formal proclamation of them. If you are only a superficial student, and make pretensions to learning which your acquirements do not justify, you will inevitably have to encounter a mortifying defeat; for you may set it down that in cultivated society you will pass for nothing more than you are really worth. My advice to you is, to acquire as much useful information as you can, and to use it in conversation where there is manifestly occasion for it; but in no case whatever to volunteer a learned remark where there is no higher purpose to be answered than mere personal display. And never venture on a subject, especially with an air of confidence and erudition, upon which you are conscious your attainments are too shallow to justify it. It is an experiment always fraught with danger; and many instances have I known in which it has resulted in a humiliating exposure both of ignorance and weakness. You are at liberty, indeed, to converse upon subjects on which you are not well informed; this, as I have elsewhere intimated, is one important means of increasing your information: but, in every such case, do not attempt to get more credit for intelligence than you really deserve: do not assume the air of a teacher when you are conscious that the attitude of a learner belongs to you. In this respect, as well as in every other, honesty is the safest and best policy.

Let me caution you still further against a habit of light conversation. I have known young females with whom this habit had become so confirmed, that it seemed as if they could scarcely speak but to trifle; and who would even choose to remain silent, rather than join in conversation in which their favourite passion could not be indulged. You cannot contract such a habit but at the expense of forfeiting the esteem of the wise and good, of sacrificing true dignity of character, and throwing yourself into a current of temptation in which there is every probability that you will be irrecoverably lost. Scarcely any habit more than this imparts a disrelish for the society of all except triflers, and hardens the heart against the influences of religion. I do not wish ever to see you gloomy, or austere, or spiritless; but as you value all that is most precious in time and eternity, I pray you never to give yourself up to a habit of levity. Avoid even the most distant approach to it; for it is the nature of every habit, and especially of this, to make an insidious beginning, and to grow strong by indulgence. If you are thrown into company in which it is the fashion to trifle, get out of it as soon as possible; and while you are in it, have decision enough to let it appear that you are not in your favourite element; and if you should even have so much as to express your disapprobation, and to administer a gentle yet dignified reproof, I venture to say, that the greatest trifler in the circle would respect you the more for it. There is no apology to be made for such a habit on the ground of constitution, education, or any thing else; and if you yield to it, I must again remind you that you do it at the expense of character, usefulness, and happiness.

Be careful also how you indulge in sarcasm. If you are constitutionally inclined to this, you will find there is no point in your character which needs to be more faithfully guarded. There are some few cases in which severe irony may be employed to advantage; cases in which vice and error will shrink before it, when they will unhesitatingly confront every other species of opposition. But it too often happens that those who possess this talent use it too indiscriminately; and even more frequently to confound modest and retiring virtue, than to abash bold and insolent vice. But be assured that it is a contemptible triumph that is gained, when, by the force of sarcasm, the lips of a deserving individual are sealed, and the countenance crimsoned with blushes. And there are only a few cases—cases in which the cast of character is peculiar—that will warrant the use of this weapon against vice itself. You may take it for granted, in all ordinary cases in which a sarcastic remark has done its office, that you have excited feelings of no very friendly character towards yourself. You may be flattered by the compliment which you imagine those around you are paying to your wit, but it were more reasonable for you to grieve at the reflection that you have not improbably lost a friend.

In connection with sarcasm as displayed towards those with whom you converse, let me say a word in respect to your treatment of absent characters. Never volunteer unnecessarily in speaking ill of any body. You may indeed be placed in circumstances in which it may be proper and even necessary that you should express an unfavourable opinion of characters; that you should state facts concerning them of the most disagreeable nature. But what I object to is that you should do this when circumstances do not require it, and when no good will be likely to result from it; for it at once indicates a bad disposition, and is a means by which that disposition will gain strength. But in no case allow yourself to make any unfavourable representation of a character, unless you have ample evidence that is accordant with truth. By neglecting to observe this direction, you may do an injury to an innocent person, which it will afterwards never be in your power to retrieve, and acquire for yourself the reputation of a slanderer. There is an idle way of discussing characters, in which less is usually meant than meets the ear, and which often seems resorted to merely for the sake of filling up the time. Remember that if you allow yourself to join in this kind of conversation, you always do it at the hazard of making for yourself enemies; for though your remarks may be made with perfectly harmless intentions, and may convey no bad impressions to the individual to whom they are addressed, yet when they reach the ear of the person who is the subject of them, unaccompanied by the manner in which they were uttered, and not improbably in an exaggerated form, they will almost of course be regarded as indicating diminished friendship, if not decided hostility. Above all, never venture censorious remarks upon characters when you are thrown among strangers. Many instances have occurred in which an individual who has ventured upon this experiment has afterwards made the mortifying discovery that the person who was the subject of his remarks was listening to them; or if not, that they were heard by some relative or near friend.

The only prudent course in such circumstances, is to say nothing which will expose your own feelings or the feelings of others in view of any disclosure that may be made.

The Testimony of Nature and Revelation to the Being, Perfections, and Government of God, by Henry Fergus, *Dumfermline*; 1 vol. *Philadelphia*, Key & Biddle.—The chief aim of this publication is to answer and refute the objections sometimes urged against the attributes, and even the being of the Deity—from the existence in the world of moral and physical evil, from "the structure of the earth, the qualities of some of the inferior animals, and the vices and miseries of mankind." As these are topics, however, which no finite understanding can comprehend, and much less explain, the utmost that can be hoped from the attempt to reconcile apparent contradictions in a system vastly above our scrutiny, is by a train of logical deductions, to make that appear probable to the understanding, which the heart, when rightly touched, adopts without misgiving. After Paley's Natural Theology, there is not much left to be said on that branch of the subject, and accordingly the author has availed himself occasionally of his labors, and of those of others who have touched the same matters, while he has fortified the lessons of Nature by the proofs from Revelation. Altogether this is a book likely to be useful, for it is of moderate size, and is attractive, as mere reading, by its style and mode of illustrating the main argument.

The Rudiments of Latin Grammar; by Thomas Ruddiman; *with a Complete System of* Prosody *annexed.* By William Burke, Principal of the Seminary of Richmond, (Va.) Richmond, Samuel Shepherd & Co.—This strikes us as a good Grammar, particularly in its prosody, which is carefully prepared and intelligently explained. It is in prosody, too, that American classical instruction most needs improvement. We willingly infer from the care obviously bestowed upon this part by Mr. Burke, that it is called for by the increasing demand for such knowledge.

Mary of Burgundy; or the Revolt of Ghent: by the Author of 'Richelieu.'—As a historical novel writer, Mr. James is certainly far in advance of any of the competitors for the mantle of Sir Walter. His first effort in 'Richelieu' was honored, if we mistake not, with the warm commendation of the great master himself; and his last production previous to this, 'Henry Masterton,' was very generally admired. A perusal of the first volume of 'Mary of Burgundy,' induces us to believe that the work will be as great a favorite as any that has preceded it from the same hand. The style at the commencement is so close an imitation of that of Scott, as almost to excite a smile occasionally in the reader; but as the story proceeds, and the writer warms with the creations of his fancy, he dresses them out in colors from his own mind, and succeeds at last, as becometh all true story tellers, so to interest his hearer, that he forgets the narrator, and fights, loves, robs, eats, and drinks, as the good people do with whom he is for the time associated.

It has often occurred to us, that the materials out of which Mr. James has built up his fiction of the Revolt of Ghent, offer the finest subjects for a striking book that history presents. For, did any man of half his genius take the pains to rescue the cause of the trading classes of Europe, in the struggle for liberty with a semi-barbarous nobility, that Scott has done to hallow those feudal oppressors, in our associations of everything that is dazzling in action, and romantic in feeling—he would build up a monument of heroism for the world, and of glory to himself more enviable even than that which immortalizes the Scottish Boccaccio. It was among those classes stigmatized as "money-getting burghers," by the rapacious marauders whose noble occupation it was to cut their purse-strings, that the spirit of liberty—the last records of the lost rights of men—were cherished and preserved in feudal Europe. It was among them too, chiefly, that, next to the clerical ranks, the little intelligence that was scattered abroad was diffused: and though they knew not that pure light of Freedom which has since been shed abroad upon the earth, they were still the medium through which those luminous minds, that issued in streams of glory from the meridian of Greek and Roman civilization, have penetrated through ages of darkness and barbarism, to kindle our happier day. They kept the sacred fire burning, when the altar had grown into contempt; and, though voiceless themselves, until the Art of Printing taught them how to give utterance to their gathered cry for emancipation, they were still the humble instruments through which mind called unto mind, through centuries of ignorance and oppression. Blessed be the endeavor of him who shall attempt to rescue these calumniated classes from the forbidding associations with which the pen of genius has too often invested their humble fortunes!

New Work on Constitutional Law.—Messrs. Collins & Hannay, of this city, have now in the press and will speedily publish, in a duodecimo volume of about 200 pages, "*Outlines of the Constitutional Jurisprudence of the United States, designed as a Text Book for Lecturers, as a Class Book for Academies and Common Schools, and as a Manual for popular use.* By William A. Duer, LL. D., President of Columbia College." This work was drawn up at the request of "The American Lyceum," communicated to the author in a resolution passed at their last annual meeting in this city in May last, at which time we took occasion to notice and express our approbation of the proceeding. The measure was understood to have originated from a conviction on the part of a respectable and learned association of persons, chiefly engaged in the instruction of youth, that the study of our political institutions ought to be rendered a branch of general education; and that none of the existing treatises on Constitutional Law were adapted to that purpose. President Duer was applied to to prepare a work of a more popular character and reduced form; and was selected for the task, not merely from his professional education and character, but from being known to have been engaged in the regular delivery of lectures on the subject in Columbia College, where Constitutional Law forms a part of the studies of the senior year. The importance of that study, however, in this country, and at the present moment, we conceive to be such as to render it highly desirable that it should be more widely diffused and circulated at an early age. From the plan of the work, of which we have had the opportunity of reading a part in MS., the low price at which it will, we understand, be offered, and the clearness, method, and skill with which it is executed, we think it well calculated for the ends for which it is designed; which not only comprehend the instruction of youth, but the information of persons of all ages, who may feel the necessity of a more accurate and full knowledge of the principles and powers of the National Government than is readily accessible, except to those conversant with books of a professional and technical character.

In Bell's Weekly Messenger of the 14th, we are sorry to find the death of that accomplished young nobleman, Lord Dover, announced.

Lord Dover was warmly attached to literary pursuits, and was an author of some reputation; his last work was "Correspondence of Horace Walpole with Sir Horace Mann," published from the originals in the possession of Earl Waldgrave. He also wrote the "Life of Frederick the Great, King of Prussia."

FOREIGN INTELLIGENCE.

By the packet ship Europe, Capt. Maxwell, we have received our regular files of English papers to the 16th ult.

Among the presentations to the King at his Levee on 10th July, was that of *Joseph M. White*, delegate from Florida, by the *Chargé d' Affaires* of the United States, *Mr. Vail.*

The most important item of intelligence is a confirmation of the report received by the way of Gibralter, of the destruction of Dom Miguels fleet by Admiral Napier, the particulars of which will be found below.

Belgian papers just received state that the new terms proposed by the King of Holland as the bases of a final arbitration are, that Belgium shall bear a larger proportion of the debt than was at first suggested, and that till such adoption he forbears to say a word in the admission of the inderendence of the new kingdom. In this proposal may be discerned the germs of a fresh crop of protocols.

The Paris papers of Wednesday mention the arrest, in that capital, of a Polish Priest, implicated in some political designs, and state that several other Poles have been ordered to leave Paris. The Chamber of Deputies of Baden have, it appears, passed a resolution in reference to the answer of the Grand Duke to their address, in which they re-assert that any infringement of the liberty of the press will be illegal.

The Neapolitan and Sardinian governments have communicated to the court of France their protest against the alteration made by the Spanish government in the law for regulating the succession to the Crown of Spain.

The German papers give an account of the reception of the Prussian Ambassador at the Porte, where he appears to have been reeeived with special marks of favor. It is stated that the Sultan expressed great admiration of the Prussian military system, and mentioned his intention of sending a number of young Turks to Berlin to learn the art of war.—Advices from Greece in these Papers represent that new kingdom to be in a state of tranquillity and the people to be enthusiastically loyal to their young King, who has fixed upon Athens as the place of his residence.

The dispatches from the Marquis Palmella and Colonel Napier, are dated the 30th ult. off Lagos.

These dispatches state, that the expedition attempted to land, in the first instance, at Villa Real; this was on the 24th. In this attempt it was opposed by the garrison, which consisted of a force of about 12 or 1400 men. On the demonstration of their opposition, however, Captain Napier immediately drew up his ships in line against the batteries of the garrison; and after a brief cannonading, the garrison, it appears, being divided in opinion, part of the troops fled from the town, and part declared for Donna Maria. After a short interval, however, a portion of the troops who had retired from the garrison, returned and joined the troops of the Queen; making the number of these adherents about 600. Count Villa Flor having taken the necessary measures for securing the possession of the town, and having left therein a sufficient number of men, divided the remainder of his force into two divisions. With one of these divisions the Count directed his march to the north, in pursuit of the Miguelite Governor, Count Molellos, towards Beja, in the province of Alemtejo, in which province the inhabitants are said to be strongly in favor of the Queen. The inhabitants of Villa Real and its neighborhood, voluntarily assisted them with 400 horses.

The other division, headed by the Marquis of Pal mella, marched westward, through Tavira and Faro, to Lagos. At Tavira and Faro they were joined by the garrisons, and joyfully received by the inhabitants. Deputations and addresses were received from all the towns and principal villages near which they passed, and the Constitutional flag of the Queen was universally hoisted throughout the whole of the kingdom of the Algarves.

Thus, the last accounts leave the Marquis of Palmella at Lagos; having succeeded, without bloodshed, in placing the ancient kingdom of Algarves under the rule of Donna Maria, and having afforded the inhabitants of that rich and important part of Portugal the opportunity of showing their attachment to the Constitutional cause.

At Villa Real they found 30 pieces of cannon, and about £5,000 in money.

[*From the London Times of 15th July.*]

Napier (for Captain, or Admiral, or Count, are mere insignificant designations in comparison with his name) has gained a great and decisive victory over the Miguelite fleet. Seamen only can appreciate the merits of this action in a professional point of view· they only can understand the difficuly of the combat—they only can tell what extraordinary skill and courage were necessary to undertake the attack and accomplish the capture of ships of the line by frigates! But all can understand and all admire, in a general sense, the gallantry of the enterprize, and all can see that this important victory affords the last and crowning proof of the immediate necessity of a recognition of the rights of the Queen of Portugal. Probably while we are still writing Napier has realized his ardent hope of planting the standard of Donna Maria in the grand square of Lisbon.

"Falmouth, 13th July.—The steamer Birmingham, Captain Beazley, arrived here last evening, having on board M. Mendybell, who brought despatches from Lagos, and set off immediately for London. She brings intelligence that the squadron under the command of Admiral Napier, three frigates and a covette, a brig, and a schooner, sailed from Lagos Bay 2d inst. and the following day came in sight of the Migulite fleet, nine sail; then calm.—a breeze springing up, bore down upon them, and after a severe action, succeeded in capturing the Admiral's ship, Don John. 74 guns; the Nar Rainha, 74; a large store ship, 52 guns; the Princess Real, frigate, and a corvette, which were all carried into Lagos, where they are immediately to be refitted, for the service of her Majesty, Donna Maria.—Officers killed,—Captain George, of the Pedro, Admiral's flag ship; Captain Goblet, of the Donna Maria; Lieutenant Miller, marines; the Master of the Rainha da Portugal, and Lieutenant Wooldridge, Flag Lieutenant, severely wounded, since dead. Wounded,—Captain Napier, Jun., Captain Reeves, Lieutenant Edmonds, and Captain Vancello, of marines, all severely. The loss on the part of the Miguelites was very great.

"The Tagus is blockaded. The number of troops which had declared for the Queen at Algarve, is from 6000 to 7000 men, and makes the force now under Compte Villa Flor about 10,000."

On the return of the squadron with their prizes to Lagos, the corporate body presented Admiral Napier with a crown formed of laurel.

The Paris evening papers of Wednesday say that General Romarino had arrived near Bordeaux, with 200 volunteers for the service of Don Pedro, and equipments for 500 more.

The agents of Miguel are very active in London. They have purchased four steamers—the Lord of the Isles, the United Kingdom, and two others—on his account. These are to take about 300 sailors on board at Plymouth and Portsmouth, and sail immediately for the Tagus.

Letters from Madrid state, that the Spanish Government have offered assistance to Miguel, upon condition of the Usurper granting a comprehensive amnesty, a constitutional charter, and making a change in his Ministry. Such a charter as King Ferdinand would stipulate for, is not very likely, we should imagine, to be refused by Miguel.

Connected with these movements in Spain and Portugal, is that of a French army of observation, to be stationed in the Pyrennees, in order, it is said, to counteract any measures which the Spanish Government may take in behalf of Miguel. Marshal Clausel os named as thio commander of this force.

The following sketch of the relative positions, population, and resources, of the cities and country lately taken from Don Miguel, by the forces of Donna Maria, may be interesting at this moment:—

The little province of Algarve, which formerly constituted a part of the Moorish kingdom of that name, extended nearly over the whole of the southern coast of Spain, and included a part of Africa, though still denominated a kingdom, is very much curtailed. It is separated on the north from Alentejo by the mountains of Moncheque and Caldiero, and from Spain by the Guadiana; the soutnern part is bounded by the Atlantic Ocean. Its situation is peculiarly favourable for commerce, possessing a greater number of good harbours than any other equal portion of the country. Its greatest length is 76 miles from east to west, and from 17 to 30 broad, from north to south. It containes, 4 cities, 12 towns, 60 villages, and about 94,000 inhabitants. The country, however, wants corn, from neglect of tillage, for the land is good, and produces wine, oil, raisins. and many other fruits, of which several cargoes are yearly exported; there is also a good fishery on the coast. Lagos, formerly the capital of this kingdom, is an ancient city, seated on a bay of the same name, navigable by the largest ships: it is 118 miles distant south by east of London, and contains nearly 3000 inhabitants. It is irregularly fortified, and two forts defend the harbor. Tavira, the present capital of Algarve, is a rather considerable city. It stands in a fertile and pleasant neighborhood, 135 miles south-east of Lisbon, and 58 from Lagos; it has an excellent harbor, and is divided by a river into the east and west towns. There are some very old fortifications and a castle, besides two forts that defend the harbor. It contains 1400 houses, and above 5000 inhabitants. Faro is a city, with modern fortifications and a castle. It is situated in a level country, on a bay 20 miles south by west of Tavira, and has a good but difficult harbor for ships not exceeding 200 tons burden. It is the see of a bishop, and contains nearly 5000 inhabitants, who carry on a considerable trade in wine, salt, fruits, &c. Its low situation renders it rather unhealthy. It suffered much in the great earthquake in 1755, by which entire streets were converted into ruins. The jurisdiction of this district and city belongs to the Queen of Portugal, whose ouvidir resides here, to collect her revenues, administer the laws, &c. All these cities have a sufficient number of churches, convents, &c.

Cape de Verds.—Capt. Marriner, of the brig Zipporah, who left these Islands on the 23d ult, states seven cargoes of provisions had been received there from the U. States for the suffering inhabitants, and one cargo of corn from Africa.

Mr. Martin, a merchant at Bonavista, informed him that about 18,000 was the number that had died by starvation in the whole Islands' and not 40,000, as has been stated. Mr. Martin was of opinion that if the rain should fall as usual this month, (Aug) they would do very well; otherwise, they would again need assistance from the United States. They are very greatful to the people of this country for their goodness, heretofore, towards them.

The schr. Halcyon has arrived at New Orleans from Tampico, with $220,000 specie. The letters by this vessel are to the 16th ult., which state that throughout, that country remained in the same unsettled state as per last advices. The troops which left Matamoras to reduce Tampico, staid a few days in that neighbourhood, without making any offensive movement, and afterwards took up their line of march back for Matamoras. One letter says,—"The accounts from Mexico by the last mail are, if any thing, worse than before. The government troops that went in pursuit of the rebels, have been defeated, and Gen. St. Anna has again been obliged to take command of the army." The Cholera was raging at San Luis, Potosi.

SUMMARY.

The remarkable exemption of New York from even the ordinary degree of summer sickness, as contrasted with the melancholy scenes of last year, presents a striking result. All now is bustle, activity, life, and movement—then stillness, melancholy, and apprehension reigned, almost undisturbed. In looking now at what then were scenes of desolation, and reverting to the yet recent past, one cannot help admiring that elasticity of spirit and enterprize, which rebounds at once when the pressure is removed, and repairs so immediately, or effaces, the effects or the traces of previous misfortune.

In every department at present business is unusually active. There has been scarcely any summer interval this year, hardly any intermission in the incessant din of prosperous industry. Universally too—or so much so as hardly to render any qualification of that term necessary—the commercial operations of the year are said to be fortunate; the footing of business remarkably secure; and all are contented, or as much so as the ever restless spirit of commerce—happily restless—will permit its votaries to be.

The Norfolk Herald of Friday says:—The President's health, we learn, has been much benefited by his sojourn at the Rip-Raps; the situation evidently agrees with him. On Tuesday he took an excursion to the Capes, in the Revenue Cutter *Jefferson*, Capt. Webster, and on Wednesday he was gratified with an exhibition of the skill of the Artillery School of Practice, at Fortress Monroe, in target firing, which, we are informed, was executed at a mile's distance, with almost the precision of rifle shooting.

The Hygeia Hotel continues to be crowded with fashionable visiters.

Another first rate ship was added, on Saturday, to the number of splendid vessels that our ship yards have furnished for the mercantile service of our country. The launch of the "Hark! Away," a noble vessel of 550 tons burden, took place in fine style on Saturday afternoon, from the navy yard of her builder, Mr. James Beacham.—[Balt. American.]

The Eleventh Ship.—Another fine substantial vessel has been added to our fleet of whalers. She is called the Helvetia, three years old, of 330 tons, and cost $17,000. The Helvetia will be immediately fitted out for a three years' cruise in the Pacific, under the command of Captain Cottle, the veteran and enterprizing commander of the America, on her last passage.—[Hudson Gaz.]

The last mail brought news of the death of Judge Henderson, of the State of North Carolina, and for many years one of the most honored and respected citizens of that State.

An Elephant, said to be the largest ever seen in this country, has made his *entree* among the Philadelphians. The price asked for him is $6000, and he measures 35 feet 3 inches in length, and is 8 feet 9 inches high. He arrived in the brig Treaty, from Calcutta.

Explosion.—We understand by a gentleman from Newburg, that on Saturday afternoon last, the finishing house attached to the powder mills of D. Rogers, Esq, near Newburg, Orange county, was accidentally blown up, and one man, the only one in the house at the time, was instantly killed. This is, we believe, the fourth or fifth accident of the kind which has occurred at that establishment in a few years.—[Ulster Co. Echo.]

Emigrating Indians.—The Wabash Mercury of August 1st, says that on the Tuesday previous "between three and four hundred of the Pottawattamie Indians passed down the Grand Prairie, five miles west of Lafayette, on their journey to their allotted territory west of Mississippi. We learn they were accompanied by Col. Pepper, the removing agent, and Lieutenant Montgomery, of the army, as assistant. They are in good health and removing condition.

[*From the Globe.*]

Official.—The Convention between the United States and the King of the two Sicilies, concluded at Naples on the 14th of October, 1832, having been ratified by the two parties; the ratifications of the same were duly exchanged in that Capital, by Mr. Auguste 'Davezac, on the part of the United States, and the Prince of Cassaro, on the part of the King of the two Sicilies, on the 8th June, in the present year.

The Vicksburgh, Mississippi, paper says that a school-master in a neighboring township, has laid aside Murray's "Exercises," and placed the Acts of the last Legislature of Mississippi in the hands of his pupils, for the purpose of instructing them in the art of turning bad English and bad grammar into good. He is of opinion, that the pamphlet containing the acts, is richer in solecisms and violations of the rules of grammar, than any book in the language —*except* the pamphlets containing the acts of the preceding nine years.

St. Louis, Missouri, 6th August.—A detachment of United States dragoons, under the command of Lieuts. D. Perkins and C. C. Davis, arrived at this port on Sunday last, in the steamboat Peoria, from the Illinois river, and immediately proceeded to Jefferson Barracks. They numbered seventy-one men, recruited at, and mostly of the city of New York. We understand that they are fine looking, intelligent young men, of respectable trades and professions in the city from whence they came; and must add respectability to the army, and reflect credit upon the officers commanding.

The detachment was about twenty-five days in performing the trip from New York, via Buffalo and Chicago, to this city; and have reached their destination in good health, notwithstanding the unfavorable time at which they travelled. The result of the trip offers a practical argument in favor of the route, as being most advantageous for the transportation of troops, as well as preferable for emigrants destined for the west.—[Missouri Republican.]

On the morning of the 9th instant, one of the powder mills at Sumneytown, Montgomery County Pa. was blown up, by which a Mr. J. Shuler, one of the hands employed there, lost his life. He has left *twelve* children and a widow, whose only support he was, to mourn their sudden and disastrous loss. The accident can in no way be accounted for.

Philosophy.—The following annunciation, which we find in the Pittsburg Gazette, shows philosophy in an innkeeper worthy of imitation:

"*Fire.*—The Black Horse Tavern, situated on the Pittsburg and Greensburg Turnpike Road, about four miles from this city, was burned down last night. We have not learned exactly how it originated, except that it was accidental. The loss is said to be about $3,000. We were pleased with the remark of the proprietor—'I never liked the house, any how. I will now put up a tavern worthy of the stand, and in which travellers and visiters, with their families, may be properly accommodated.' "

The Milk Sickness.—The Danbury Herald contains a letter dated Vincennes (Indiana) July 11th, of which the following is an extract:

"At Logansport, on the banks of the Wabash, I was cautioned by an elderly lady against using either milk, butter or beef, on my way o Vincennes. As a reason for her caution, she informed me that the milk sickness was common in this State. I had heard of it before, but knew little of it. She informed me that very many deaths occurred annually by this dreadful malady. There is a difference of opinion as to the cause that produces it: but the general opinion is, that it is occasioned by the yellow oxyd of arsenic in the low ground and woodland, and particularly near the Wabash river, and that some weed (yet unknown) imbibes the poison, and when eaten by cattle, causes them to quiver, stagger and die within a few hours. If cows eat it the milk is poisoned, or butter that is made from the milk; and is also as sure death to those who use the milk or butter as it is to the animal that eats the weed. Great care is taken to bury such cattle as die with it; for if dogs, &c., eat their flesh, they share the same fate, and it operates upon them as violently as upon the creature that was first affected with it. The butcher uniformly, in this State, runs the victim for his knife a mile, to heat his blood, and if it has eaten the weed, it will at once on stopping quiver and shake; if it does not, it is considered safe to butcher, and this is the uniform test even when beef cattle show no sign of having ate the weed. Indiana is not alone in this misfortune: there have been many cases in some parts of Ohio and south of St. Louis, and other of the south-western States. I have seen many farms, with comfortable buildings and improvements, entirely abandoned, and their owners fled into other quarters to avoid the dreadful curse. And yet I confess I have never seen any section of country superior in soil, to the land adjoining the Wabash, and this is the only objection to it. Yours, &c."

[For the New York American.]

Mr. Editor—In viewing the beautiful and fine Man of War, the Delaware, it occasioned the following suggestions:

A National Marine School!—To be established upon one of the small Islands in the river—say for instance upon Great Barn Island, or any other suitable and convenient.

All boys in Alms or Poor houses, boys wandering and prowling about the streets without homes, or desertion by neglect of worthless parents and left destitute, such should be the only objects of this Marine School. Thus would one of the greatest pests in society be converted into a means of national glory.

The dress should be a blue jacket and trowsers, and the education, to make thorough seamen and valuable sailors (not to make Captains of them, and teach them Latin and Greek) but to make good seamen.

After passing examination by a Nautical Board, what Captain would not covet a boy thus instructed and passed by the Nautical Board? The being brought up in the American Marine School, would become a certificate for employment all over the world.

A small sloop might be the school room, and its various parts and duties lessons.

From whence would the means arise to pay for all this?

1. Concentrate all moneys at present applied for such provisions of desertion and wretchedness in the various places.
2. From the School Fund.
3. From the State.
4. Emigrant and trading vessels a trifle.
5. Voluntary subscriptions, and myself, as a Blue Jacket, will pay the first ten dollars toward it.

Let us hope some patriotic pen will further advance this Marine School. Old Blue Jacket.

The subjoined article is recommended in the Gazette, to the notice of the Corporation of this city, and the Chief Engineer of the Fire Department:—

A London paper gives the following account of a simple invention, which, may be the means of saving many lives.

Wednesday afternoon, an interesting experiment of a new but simple mode of assisting the inmates of a house when on fire to escape from impending destruction, took place in Bridge road, Borough, near the police station.

The apparatus is the invention of Mr. Weeks, the brewer, of Stockwell, and consists of a broad sheet of canvas, with numerous loop-holes at the border, to admit the grasp of persons in attendance in the stretching of the sheet. The foreman and firemen of the Protector Fire Office, as also numerous police constables, were in attendance, and a considerable number of scientific and other persons were present. The canvas being stretched by the assistance of the firemen, policemen, and passengers, a young man named Norris, a sergeant of police, and several other persons, leaped several times from the roof and other parts of the house, and alighted in perfect safety. Several magistrates and other distinguished persons witnessed the proceedings, and seemed convinced that, of every means of rescuing the inmates of houses, when on fire, from the risk of perishing in the flames, this simple canvas sheet is most effective, the most portable, and the most certain of being adopted as an effectual life preserver.

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MISCELLANY.

[*From the London Athenæum.*]

Sir John Malcolm.—It is with much pain we state that Sir John Malcolm died after a short but severe illness, at his house in Princes Street, on the 30th May, in the sixty-fifth year of his age; he was all but recovered from a paralytic stroke, when he ventured out in the east wind; was attacked with influenza and hurried to the grave. His loss will be felt by his countrymen, more particularly, by persons connected with India: to worth he was kind and friendly, and to genius he ever lent, without solicitation, a helping hand. He was much beloved in Bombay, and during his lifetime, his comrades in council and in arms, ordered his statue as a companion to that of Elphinstone. He abounded in anecdote; his happy gaiety of nature and unrestrained kindness of heart, made his company acceptable to the most fastidious; nor did we ever meet with a man, who, like him, could pass so readily from the comic to the serious—could smooth his brow in the midst of the most joyous laughter, and give wholesome counsel and solemn advice.

He was known and beloved from the centre of Persia to the frontiers of the Birman Empire; he spoke the language of the East with fluency, and was intimate with the natures and social manners of all the tribes of the East. His literary works will continue his memory with honour among us: his History of Central India; his Political History of the East; his Persian Sketches; his Account of John Leyden; and lastly, his Life of Lord Clive, unpublished, but completed to the last chapter, are works that cannot soon die; they show a skilful scholar, a shrewd biographer, and an accurate and eloquent historian. The close of his life may be reckoned unfortunate. Relying on the influence of his talents, the good deeds he had done, and, moreover, on his right of birth, he offered himself as a member of the Dumfries Boroughs, and was rejected.

The last time we saw Sir John was at the Abbotsford subscription meeting: he looked pale and exhausted—we still think we hear him saying, "And should all our endeavors fail—and they surely cannot—it will be a consolation to think, that when on some distant day my son passes along the Tweed, and Abbotsford in ruins, he can truly say, 'My father tried to save you from destruction, but was not seconded by his country.'" Nor shall we soon forget the anecdote he told us of Lord Clive:

"When Clive was a young man a friend called on him one day, and found him sitting with books and a pistol on the table. 'Take that pistol,' said Clive to his visiter, 'and fire it out of the window:' he did so at once; before the smoke subsided, and while the room rung with the report, Clive sprung to his feet, exclaiming, 'God has something for me to do yet—I snapped that pistol twice at my head before you came in—yet it did not go off—God has work for me yet.'" We hope a full and ample memoir will be written of this distinguished man.

LA BELLA CENCI.

Among the pictures which adorn the Palazzo Colonna at Rome, there is one that might move the heart of a stone. The contrast of youth and loveliness it presents with the abandonment of grief, of all earthly hope, is so affecting, that hot tears have poured from many an eye, while gazing on the settled sorrow, the prophetic melancholy of this early victim of crime.

It is the portrait of the beautiful but ill-fated *Beatrice Cenci*, whose misfortune the pencil of Guido Reni has immortalized;—of her who, young, beautiful, and noble, became criminal through virtue, and who thought to escape dishonor through parricide.—So angelic is the countenance, the spectator credits with reluctance that so sweet, so expressive a face, so gentle a form, harbored a soul that, with cool premeditation, could imbrue her hands in her father's blood. But, of such a father! to whose crimes it is difficult to give a name; they were such at which humanity shudders; such as a fiend incarnate might have rejoiced to have perpetrated! The brutal insults, the diabolical suffering, of which he made his innocent children the victims, were not the worst—he was a man who had exhausted the whole catalogue of human enormity. And it was his daughter who, in the silent midnight, when even the iron hearts of the ruffians she had hired relented, seized the avenging dagger from their nerveless arm, and, by a display of dauntless energy, determined their wavering resolution.

The parricide of the Centi family is one of the deepest tangedies in the page of history. It happened in the 16th century, under the Pontificate of Clement VIIIth, and is one of the bloody catastrophies which, in the lapse of ages, is enshrined among the most marvellous of popular traditions. For a length of time this event was enshrouded in the deepest mystery; the only real evidence of the crime of this young creature was the admirable picture of Guido, who has represented her at the very moment she was going to execution. It appears that Guido struck with her transceudant beauty, solicited Clement the VIIIth to grant her a short respite, of which he profited to enter her dungeon and take her portrait, with a view of making it serve as a model for a Virgin he was then painting for the chapel of the Vatican

The real nature of the crime which led to the trial of Beatrice Cenci, was known but in a very inexact manner; the details had come down, disfigured by two hundred years of popular tradition, when the learned Abbe Maio, librarian of the Vatican, whose erudite researches have rendered such eminent service to the republic of letters, discovered among the manuscripts of the 16th century, the History of the Cenci Family ('Istoria della Famiglia Cenci.') We shall venture to offer to our readers a few fragments of this curious MS. which, in the most affecting and simple manner, traces the principal episodes of the crime, the trial, and the execution of the criminals.

"Man dies as he has lived: if the vengeance of heaven be slow in its operation, it is only to strike the surer. A splendid proof of this truth is afforded by Francesco Cenci, a noble Roman, whose scandalous and criminal mode of life led to his own tragical end, and that of his whole family.

"He was a stranger to no vice—he had accumulated crime upon crime, and even attempted to violate the honor of his second daughter, Beatrice.—She long resisted his solicitations with courage; but, reduced at least to dispair by an accumulation of unheard of barbarities, she resolved to rid herself of her father. This beautiful creature, who if born under happier suspises, would have been the model of her sex, no longer breathed but for blood and vengeance.

"It was on the 9th of September, 1598, that these two ladies—Beatrice, and Lucretia, her mother-in-law—administered to Francesco a soporific portion, that presently plunged him into a profound slumber. At midnight, two assassins were secretely introduced into Francesco's chamber, while the ladies awaited the event in adjoining an apartment. Suddenly they saw, issuing from the victim's chamber, the two ruffians, pale and disconcerted, who told them that pity had withered their arms, and that they could not immolate the old man as he slept. 'Wretches!' exclaimed Beatrice, 'you are then brave but in words—cowards as you are! It is I alone who will undertake to rid the earth of this monster. Follow me!' she added, drawing a poniard from her bosom; 'but I swear to you, that the same blow shall make you bear him company.'

"This threat terrified the two assassins: accompanied by Lucretia and Beatrice, they rushed once more into Francesco's chamber and murdered him.

"But God willed not that a parricide should go unpunished. Marcio, one of the assassins, arrested at Naples for some other crime, divulged the whole history of the tragical end of Francesco.

"The Cenci were put to the rack. The brothers, Bernardino and Giacomo, and Lucretia, were unable to endure the torture, and confessed the crime. But Beatrice, with heroic courage, resisted to the last. It was only at the moment they were preparing to cut off her beautiful hair, that her firmness abandoned her, and that she requested that Lucretia and her elder brother should be introduced to her. This was done. When they saw the unfortunate girl, whom they so tenderly loved, overwhelmed with suffering, they said to her, "Dearest Beatrice, we committed the crime, and we have confessed it; it is utterly useless, therefore, to brave any longer the torture.' 'You have then willed,' replied Beatrice, with great vehemence, 'that our ancient house should be disgraced by an eternal opprobrium. Why have you not rather preferred to expire under the most refined torments of the rack, than under the hand of the executioner!' This idea threw her into a state of convulsion that it would be difficult to describe. After a short silence, she cried, in a mournful tone, 'But since you have willed it, let it be so;' and, addressing herself in a firm tone of voice to the executioners, 'Wretches!' she said to them, 'unbind me; let the act of accusation be read to me. I will say only what I ought to say, and conceal what is fitting should be concealed.' Her wish having been complied with, she signed her confession without adding to it a word.

"The whole family was condemned to death.—The sentence was announced to them only at five o'clock, on the morning of the day fixed for their execution. The accused were locked in profound sleep when the messengers of death arrived. What an awaking was theirs! Beatrice!" says the M.S. "fairly howled with rage. Lucretia displayed great courage, and requested to be led to the chapel, in order to prepare herself for death. Beatrice also, on recovering her serenity displayed the greatest firmness, and served as an example to her whole family.

"She made her will, and ordered her body to be buried in the Church of San Pietro il Montorio. She left three hundred crowns to the congregation of the Holy Wounds; and further deposed that her marriage portion should be employed in marrying fifty poor girls. At the foot almost of the bloody scaffold her mind was occupied by ideas of love and happiness.

"When the fatal moment had arrived the nuns of a neighboring convent came for them. The two criminals delivered themselves up with firmness, and and mutually assisted each other to arrange their dress. On their sides Giacomo and Bernardino dino left the prison of Tardinova, and having arrived with the procession before the 'Procuratore fiscale,' he said to them, Signor Barnardino Cenci, the most holy father Clement the Eighth pardons you. He is content that you should accompany your brother to the scaffold; forget not to pray to God for the repose of his soul.'

"The women arrived on feet thickly veiled: their arms were slightly bound, but their hands were free. In one they held a handkerchief, and in the other a crucifix. Beatrice appeared as though she had been walking to her triumph; her expressive eye looked upon the surrounding objects with the calm serenity of her soul. On passing a church she prayed with a loud voice.

"Arrived at the place of execution, the Cenci were assembled in a chapel. Giacomo and Bernardino were the first led out. Lucretia's turn came next; she was stript to the shoulders, and her hands bound behind her back. At the humiliation of this public exhibition, and the sight of the hatchet suspended over her head, she burst into tears—'O God!' she cried, 'pardon and mercy!'

"The executioner, reeking in her blood, now approached Beatrice, in order to bind her. She was on her knees, and praying with a loud voice—'Oh, my God! you died for me on the cross, and, guilty as I am, a drop of thy sacred blood has flowed for me,—I trust in thy infinite mercy! "She then stretched out her arms to the executioner, and said to him, "Thou hast my body for its punishment, mayst thou at the same time release my soul for its safety.' At the foot of the scaffold she took off her shoes, ascended the steps with heroic firmness, and laying her head on the block, and arranging her clothes so that her modesty might have nothing to fear, she tranquilly awaited the fatal blow.

"The Pope had retired to a country house some distance from Rome. The discharge of three pieces of cannon announced the moment of execution. At this signal he was deeply affected, and wept over the fate of this unfortnnate family; and, stretching forth his arms to Heaven, he gave that plenary absolution to the Cenci which they had solicited.

"A profound silence succeeded to the confused tumult of voices of a whole people, whose prayers were confounded with the agonizing groan of the criminals.

"The body of Beatrice was interred in the church of San Pietro Il Montorio, near the grand altar, which Raphael's picture of the Transfiguration has rendered so celebrated."

The whole catalogue of human misery contains not a deeper tale of wo, than the story of La Bella Beatrice Cenci.

[*From the Chinese Coarier, March 20th.*]

Punishment in China.—Perhaps the most dreadful punishments are inflicted upon criminals in the "Celestial Empire," and crimes are probably here committed more frequently, than in any other country.

For murder of a parent or near relative, or for rebellion, the prisoner is made to undergo a punishment called Ling-che, which is performed by cutting him to pieces by degrees, commencing at the feet or hands. In case he has any relative who can bribe the executioner, the torture may be abridged, and his sufferings cease by piercing to the heatr; at times this may be done for a small sum. Another punishment for the same offence is the following:—

The culprit is fastened with his back to a large cross, placed in the ground, with his hands and feet so tied that he cannot move an inch in any direction. An incision is then made across the forehead, and the skin pulled down over the eyes and face; then the feet, hands, legs, arms, and head, are successively cut off from the trunk, which is finally pierced to the heart. Beheading is a punishment for adultery, murder, &c. The prisoner is made to kneel (in some public place, but not exposed on a scaffold) towards the throne of the "Son of Heaven," and as if returning thanks for the punishment about to be received, he bows, and while raising his head, it is struck off by one blow of a sword; the head is then put into a cage, sent to the place where the crime was committed, and hung at the end of a pole or against a wall. The men employed in this service are very expert and strong, and go to their work with as much composure as a butcher to the slaughter. Prisoners are often, after being confined some time in goal, let loose and branded on the forehead with a hot iron, so that they will be known wherever they go. For stealing, the perpetrator of the crime is dragged through the streets by a party of soldiers, who alternately lash him with a thong of plaited rattans on the bare back, and beat a large gong to give the people notice, that they may witness the punishment. In some cases, the knees and ancles are compressed in iron machines made for the purpose; this is extremely painful. There is no punishment more common and unmercifully executed than that of whipping. Smuggling saltpetre into the country, from which powder may be manufactured, is punished by decapitation. Strangling is also a very common punishment The criminal is tied to a strong upright stake, with his hands and feet fastened: a stout cord is then put round his neck, and passed through a hole pierced in the stake. A stick of about 1 1-2 inch in diameter is attached to the cord, and the executioner standing behind him wrenches it around. The eyes soon start from their sockets, and the tongue is seen issuing from the mouth which foams and bleeds excessively, finally the neck is cut through by the cord and the head falls to the gronnd. No cap or covering of any kind is placed over the face during the execution.

The following crimes which should come as well under the cognizance of the law as others, are very lenently punished.

A grandfather or grandmother killing a grandchild a father or mother wilfully murdering their son or daughter, and a master or mistress putting to death a domestic slave, are only punished with 60 to 70 blows, and should they wish to lay the murder falsely on some other person, the punishment is but 80 blows and three years transportation.

Splendid Bedstead.—There has been lately exhibited in the Palace of the Tamedo, at St. Petersburgh, a state bed, constructed at the royal manufactory by order of the Emperor, to be sent as a present to the Schah of Persia. It is formed of solid crystal, resplendent with silver ornaments. It is ascended by steps of blue glass, and has a fountain underneath, so contrived as to throw out on each side jets of odoriferous waters. The effect when the chamber is lighted up is absolutely dazzling, as it has the appearance of myriads of diamonds.—[Galignani's Messenger.]

POETRY.

[From the New York American.]

THE AMERICAN EXILE.

Thou'rt in a fairy clime, sweet one!
'Mid the bright and loveliest thou,
Yet a shade is o'er thy bosom cast,
And o'er thy sunny brow.

Dost thou pine for thine own far distant land,
With its forests vast and drear,
For the wild bird's call o'er the clear blue lake,
And the bounding of the deer?

Or weep'st thou for a Mother's form,
By thy lonely couch to kneel;
Or the holy kiss of a Father's love
On thy pale sweet brow to feel?

Both, both, though the wintry wind may sweep
O'er the forest in its pride:
Though the echo of each sweet note may cease
The ruffled lake beside;

Though the deer no more with its graceful step
O'er the sun-clad hills may leap;
I pine, I pine, for that far, far shore,—
For my parents' voice I weep. Ella.

[For the New York American.]

THE BATTERY AT THE CITY OF NEW YORK.

In Imitation of Lines in Beattie's Minstrel.

To —— on leaving the vicinity of the Battery for the Springs.

Oh how canst thou renounce this various store
Of charms, which Nature to her votary yields,
The *Ocean's billow* murmuring on the shore;
The *Greensward* vying with fair Tempe's fields;
The *Bird's sweet* note who wakes his matin lay;
The *Choral Band* which charms the ear at even;
The *Moonbeam* sleeping on the placid bay;
The *Setting Sun* which gilds with burnished gold the Heavens;
The *War Ship* whence Columbia's banner streams
Bearing bold hearts of whom their country's proud;
The *distant sail* which like a feather seems
Borne on the bosom of the rising cloud:
The *Sylphid* forms which brush the morning dew,
And drink health's balmy breezes at mild even:
To yield to these thy heart canst thou refuse?
And canst thou these renounce and hope to be forgiven?

These are beautiful lines; simple, touching, and most true:—

[For the New-York American.]

THE CONSUMPTIVE.

'Twas nothing that her simplest smile was worth
A seraph's brightest—nothing that her eye,
Or rolling bright or brightly calm, gave birth
To all the freshness of life's morning sky:
The blight that desolates the household hearth
Came o'er her, and she knew that she must die.
Then bow'd her gentle head beneath the blow
Which laid, at once, earth's hope and mercy low.

And her pure cheek grew cold and darkly pale
As snows by mountain caverns hid from day—
It was as if a shadow of the vale
Of death had fallen on her living clay.
And waited, ere all hold on earth should fail,
To fit her soul to walk that gloomy way;
And teach her breast to shudder at the doom
Which gather'd round to darken o'er her tomb.

Sometimes—as if she kindled at the art
Of him who subtly woo'd her—a warm flame
That fir'd anew each chill and pallid part
With vital lustre, glided through her frame.
Yet, drop by drop, life left her weary heart,
Till, failing like a springless fount, she came
To human nothingness—a faded flower
That knew a world to bloom upon no more. E. L.

STEPHENSON,
Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.
J 5 tf

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also. AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.
Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H BURDEN.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 12th to the 19th day of August, 1833, *inclusive.*

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Aug. 13....	6 a. m.	76	29.70	sw	moderate	sw	fair
	10	83	29.72	..	..	wsw	..
	2 p. m.	85	29.70	wsw	..	..	..
	6	82	29.71	...	..	...	..
	10	75	29.78	..	..		clear
" 14....	6 a. m.	69	29.82	wsw—wnw	.	nw	fair
	10	76	29.90	wnw	..	wnw	..
	2 p. m.	83	29.88	wsw—wnw	..	w by s	..
	6	79	29.88	wnw	light		clear
	10	72	29.90	ssw			...
" 15....	6 a. m.	70	29.88	s—sse	faint	wsw	fair
	10	78	29.90	sse—ene	light	sw	.. —cloudy at NW
	2 p. m.	83	29.89	..	..	wsw	.. —cloudy
	6	77	29.88	ese—w	..	..	cloudy and thunder—rain at 8 o'clock
	10	68	29.90	w	fresh	..	rain
" 16....	6 a. m.	70	29.93	ene—ssw	light	..	cloudy
	10	74	29.96	s—sse	moderate	wsw ssw.	...
	2 p. m.	81	29.96	sse—se	..	wsw se—ese	fair —cloudy
	6	76	29.97	nw	..	wsw	thunder shower —rain
	10	65	30.00	n	..	..	cloudy
" 17....	6 a. m.	66	30.00	..	light	sw by w nw	... —fair
	10	76	30.00	..	..	sw by w nne	fair
	2 p. m.	83	30.00	n—nnw	moderate	nw	..
	6	76	30.00	n	..	..	..
	10	68	30.01	..	light	.	clear
" 18....	6 a. m.	65	30.02	nw	moderate		..
	10	72	30.04	..	..	nnw	fair
	2 p. m	75	30.00	nnw	fresh	nw	..
	6	73	30.01	nne	..		clear
	10	63	30.06	nw	moderate		..
" 19....	6 a. m.	62	30.11	nnw			..
	10	70	30.15	sw	moderate	nnw	fair
	2 p. m.	78	30.11	nw	light	..	..
	6	75	30.10	nw—e	faint	.	..
	10	71	30.11	..	light	..	..

Average temperature of the week, 74°.11.

MARRIAGES.

In this city, on Sunday evening, 18th August, by the Rev. Dr. Milnor, Mr. OWEN MORRIS to Miss ELIZABETH ANTHONY—both of England.

On Thursday evening, Mr. WM. HULL, to Miss JANE DELLINGHAM.

Tuesday morning, 20th instant, at Zion's Church, by the Rev. Thos. Brientnell, Mr. WILLIAM CALLENDER, Jr. to Miss ANN MARIA, daughter of Mr. Samuel Sparks, all of this city.

On Monday evening, by the Rev. Dr. Berrian, Mr. HENRY AUGUSTUS CHEESEBROUGH, to Miss MARION MAXWELL WOODHULL, all of this city.

Last evening, by the Rev. Dr. Dewitt,—Rev. Henry A. Rowland, of Fayetteville, North Carolina, to Miss Harriet, daughter of the late Isaac Heyer, Esq. of this city.

At Morristown, N J., on the 3d instant, by the Rev. Mr. Hoover, Doctor N. W. CONDIT, to JULIA ELMER, daughter of Mr. Aaron Coe, all of Morristown.

At Woodbridge, New Jersey, on the 8th instant, Mr. Elias Dixon, of this city, to Miss Pamela Melick, of the former place.

At Poughkeepsie, on the 5th inst., by the Rev. A. Perkins, Mr. JOHN EGERTON, of this city, to Miss JANE A. RAYMOND, of that place.

In Albany, 6th inst., by the Rev. Dr. Sprague, the Hon. Micah Sterling, of Watertown, Jefferson Co., to Miss Ruth Benedict, of Albany.

In Syracuse, on the 1st inst., by the Rev. Palmer Dyer, Mr. Henry Agnew, of the firm of Agnew & Wood, to Miss Margaret Jane Philips.

On the 6th instant, in Palmyra, Wayne Co., by the Rev. Mr. Whelpley, Mr. George E. Pomeroy, to Miss Helen E., daughter of the late Doct. Robinson, all of Palmyra.

At Leesburg, Va. on the 8th inst., by the Rev. Mr. Adee, Gen. THOMAS T. WHEELER, of Maryland, to Miss HESTER ANN McLEOD, of this city.

DEATHS.

On the 1st inst., by the rupture of a blood vessel, Mrs. Sarah Mitchell, in the 60th year of her age, wife of Mr. Gerard Mitchell, of Oneida Co.

On Saturday morning, GEORGE MAIN, infant son of John V. Greenfield.

On Sunday afternoon, of a lingering illness, Mrs. SARAH, widow of the late Wm. Crolius, in the 73d year of her age.

On Saturday evening, in the 35th year of his age, JOHN DOUGHERTY.

Last evening, Mr. Gilbert Lewis, after a lingering illness, in the 33d year of his age.

On Wednesday morning, Catharine, daughter of Jacob Seguine.

In Brooklyn, on Wednesday evening, Mr. William G. Cunningham, in the 41st year of his age, son of Wm. Cunningham, Esq.

At Narrows, L. I., on the 12th inst., RULUF VAN BRUNT, aged 57 years.

At Poughkeepsie, on the 7th instant, Col. Gilbert Ketchman, formerly sheriff of Dutchess County. Col. K. was Lieut. Col. in Hawkins's Regiment U. States Artillery Volunteers in the late war, and commanded during that service, either at the Narrows or Sandy Hook.

In Ulysses, Tompkins County, on the 6th inst., Isaac Thorn, Esq. formerly of the city of New York, in the 44th year of his age.

In Oswego, on Monday last, Mr. CHARLES KNAPP, son of Mr. David C. Knapp, aged about 21 years.

In the Poor House, New Orleans, on the 14th of July, ABRAHAM BOGARD, aged 118 years and 4 days. He never drank spirits, or was ever sick, and retained his faculties until his death. [Let those who indulge in ardent spirits, reflect on the awful consequences of self destruction.]

At Dublin, Dr. LAFFAN, Roman Catholic Archbishop of Cashel.

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 400 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

⁂ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

☞ **GRACIE, PRIME & CO.** offer for sale, at 26 Broad street—

2 cases Gum Arabic
20 do. Danish Smalts, EFFF
10 do. Saxon do. do. } Reduced Duty
100 bags Saltpetre
2 do Gall Nuts; 20 tons Old Lead
100 do. Triests Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
30 do. Molleres Almonds
143 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
15 do. 6-8 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
4 do. White Quiltings
10 do. Borrie's Patent Thread, No. 22 and 25
10 do Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
25 bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35; 24½x36, 21x34½, 23x36, 26x37, 29x41, 27x38½, 21x33, 24x20, 24x28, 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.
5 cases each 1600 Sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
3 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do. do do Red do Gold do
2 do do do White do Silver do. A2

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN. Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

☞ **TOWNSEND & DURFEE**, of Palmyra. *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F31 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

INSTRUMENTS

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

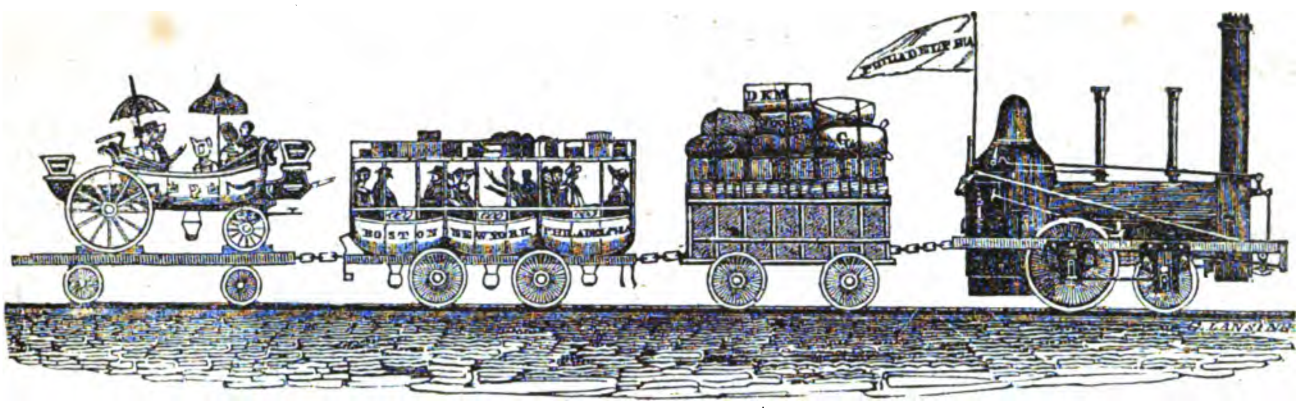
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, AUGUST 31, 1833. [VOLUME II.—No. 35.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, AUGUST 31, 1833.

We have received the Reports of the President and Directors, and Chief Engineer, of the Ithaca and Owego Railroad, which will be published, or at least a part of it, as soon as we can find room for it.

We have also on hand a communication from Mr. Bulkley, in reply to Mr. Boyden, upon the subject of the "Guard Rail," which will also receive attention as soon as other matters will permit.

We are much obliged to E. F. W. for his communication of the 15th inst. It will be found in this number of the Journal. If he can do us the further favor to furnish us with correct drawings of the different inventions of Mr. Fairman, we shall take much pleasure in bringing them before the public, through our *Mechanics' Magazine, and Register of Inventions and Improvements*, a work established expressly to aid the cause in which he labors. We are particularly desirous to obtain drawings of his "Reciprocating Rotary Compound Steam Engine," "Machine for making Wrought Nails," and "Rotary Pump."

Communications from Mr. Fairman, or from E. F. W., will find ready access to the Journal or Mechanics' Magazine.

We would also call attention to the advertisement of Mr. Fairman, which is inserted to-day, offering for sale his Nail Machine.

TRACK ROADS.—We publish to-day a communication from John S. Williams, Esq., of Cincinnati, Ohio, referring to the communication of Mr. Hartman, published in No. 29 of the Railroad Journal, or 20th July last, upon the subject named at the head of this article. It was our intention when we gave Mr. Hartman's communication to the printer, to refer to Mr. Williams' Report upon the same subject, published, with engravings, by us some time previous in the Mechanics' Magazine, New-York Farmer, and *also* in this Journal, No. 19, or 11th of May last, (although it seems to have escaped the notice of Mr. Williams,) but from the multiplicity of our engagements it was omitted, as were our remarks upon Mr. Hartman's communication also.

On the receipt of Mr. Hartman's communication we referred to Mr. Williams' Report, previously published, to ascertain how nearly the two plans resembled each other, and found that all the principles embodied in the latter were also to be found in the former, and may be applied to use, probably, with greater effect and at less expense. As to the priority of dates of the two patents, we are unable to speak. That is a matter which may be determined, we should imagine, without difficulty.

WABASH AND ERIE CANAL.—We are gratified to learn by the following extract from the Fort Wayne (Indiana) Sentinel, that the Wabash and Erie Canal, which has been so long delayed, is now in a fair way to be completed.

Indiana, but a few years since uninhabited, except by Indians, is now performing what few of the older States dared, until within a few years, to undertake. She is now making a Canal, which will, in connection with the Wabash River, form the most direct communication between Lake Erie and St. Louis, and the Mississippi and Missouri Rivers. The completion of this Canal will serve only to stimulate the inhabitants of that thriving State to other works of internal improvement. Her Railroads, already chartered, will also be constructed, and others projected from different parts of the State, either to intersect them, or to communicate directly with the Lakes and the Ohio River. The route of this Canal is undoubtedly the most *direct* between Buffalo and St. Louis, or New-Orleans, and it must become a great thoroughfare of business and travel.

This section, it will be observed by a reference to the map, forms the summit level, and opens, at seasons of high water, a passage for keel-boats from one route to the other, and of course to the Lake.

WABASH AND ERIE CANAL.—The citizens of Indiana will be glad to learn that this important work is progressing in the most satisfactory manner. Thirty-two miles are now under contract, the whole of which, there is every reason to expect, will be completed by the end of the next year, or early in the following spring. This part of the canal extends from within a mile of the Maumee to the Wabash, at Huntington. Its completion will doubtless be of great benefit to the State: the Wabash river being navigable for keel-boats to this point, at certain seasons of the year, we may then receive a considerable portion of our supplies of provisions from the Wabash country, by this route, instead of being dependent upon a tedious and uncertain land carriage, over roads almost impassable, as at present; and the Wabash merchants can also avail themselves of this route to receive their goods direct from New-York. The site of the Canal has been permanently located as far west as the mouth of the Mississinewa, and if the Legislature next winter will act in accordance with the views of the present efficient Board of Commissioners, we have no doubt that the progress of this work will fully equal the most sanguine expectations of its friends.—[Fort Wayne Sentinel.]

☞ *Rapid Travelling.*—The Locomotive Engine which left Saratoga on Friday at 5 o'clock, P. M., landed the passengers at Schenectady in *one* hour, *two* minutes and *fifty-two* seconds. The time actually consumed in running the distance—22 miles—was, *fifty-four minutes and thirty-three seconds!* being the quickest trip ever made.

	M.	S.		M.	S.
Saratoga to Balston, 6 miles,	17	31	Detention	5	7
Balston to ——— 8 do.	18	34	do.	3	12
——— to Schenectady, 8 do.	18	28			
				8	19
Running Time,	54	33			
Stoppages,	8	19			
Whole Time,	62	52—[Cour. and Enq.]			

Ten Miles of Paper.—Paper used to be sold by the sheet, the quire, or the ream; but, in "the march of improvement" stationary will not remain stationary, and so it is now sold by measure. The following order was received from a pottery firm the other day. The writer, it will be observed, gives his orders with as much indifference as though they were not at all extraordinary:

Gentlemen—Please to send us ten miles of your best printing tissue paper, in length, six miles to be 30 inches broad, and four miles to be 22 inches broad, to be wrapped on wooden rollers, according to the plan given. The object of having the paper of such great length is, that it may be printed on engraved cylinders, in the same way as calicoes, &c.

On Road Making, with the Use of Timber. By John S. Williams. To the Editor of the American Railroad Journal.

Mr. Minor,—In the last number of your valuable Journal received here, I observe a communication from Mr. Jno. Hartman, of Virginia, in which he professes to be the "inventor of an improvement in road making, in the use of timber." Claiming myself the inventorship of that improvement, I think proper to address the public in general, and Mr. Hartman in particular, through the columns of your paper.

You had the goodness to publish a drawing of the improvement, and extracts from my report on the subject, made in 1831, in your Mechanics' Magazine in April last; will you please to do the public and me the service of transferring that drawing and those extracts into the columns of the Journal?*

That improvement was invented by me previous to April, 1831, in which month I filed a description of it in the patent office. I reported it to the Cincinnati, Columbus, and Wooster Turnpike Company, Dec. 8, 1831, who ordered one thousand copies of the report printed, which was done. They petitioned the Legislature of Ohio for leave to construct their road upon that plan, as it was not recognized in their charter, which was granted by act of Legislature, dated Jan. 19, 1832, a copy of which act I send you. An account of the invention entered into many of the newspapers of the day. Nearly one thousand copies of my report, containing a copperplate engraving of the improvement, were distributed in every state in the Union. Notwithstanding all which, I do not charge Mr. Hartman with a surreptitious use of my discovery. "I [too] have secured a patent right for the use of it, which I will dispose of to companies or individuals upon good terms."

In order to show the public and Mr. Hartman that my patent covers the whole ground assumed in his communication, I will extract from my specification:

"——— have invented a new and useful improvement in the construction of roads, whereby some of the advantages derived from railroads are extended to common carriages of burthen or pleasure that travel any road so improved. * * * I lay two continuous lines of timber, or other suitable material, lengthwise on said road, such a distance apart as to form tracks for the wheels of such vehicles as are in general use upon the road so improved. I furrow, gutter, or groove one of these tracks, in order to receive and guide the wheel or wheels of one side of the carriage passing thereon. Those grooves or gutters may be made in the timber or other material—*or they may be formed by attaching cheeks or sides to a plain surface.*

"——— These tracks may be bedded or laid in or upon stone, gravel, clay, or any material of which the surface of the road is formed, and the pieces of which they are constructed may be connected by dowels or clamps, or laid upon *transverse blocks, or cross-pieces, which may or may not extend from one to the other.*

"——— Where there is much travelling upon a road so improved, I lay two sets, or four continuous lines of tracks, one set for the going and one for the returning carriages. I am aware that some of the advantages of such a track road may be gained by laying timber as above, by furrowing, guttering, or rebating both tracks, to guide the wheels, but I prefer to gutter or groove one only."

I believe that Mr. Hartman and the public will at once see that every principle contained in his communication is also in the above extracts. I will go further, and say that I not only invented the plan, but that I can prove that I invented it, in all its parts, more than two years ago, and would long ere this have put it to the test of experiment upon a large scale, had not untoward circumstances prevented it. The graduation and timber are nearly ready for eight miles of it, and in a few days will be in progress of laying.

I am by no means disposed to quarrel with Mr. Hartman, but shall continue to grant rights upon terms which shall satisfy the public that individual aggrandizement was no moving cause of my taking out a patent therefor, cautioning all concerned against acting under an inferior title.

Should Mr. Hartman not be convinced that I have a priority of right in this matter, or fail to convince me that he has, I shall propose to him a reference of the whole matter to men competent to decide between our claims, and that they meet in Washington City sometime during the next session of Congress.

As to my preference for grooving or guttering one track only, it originated in my knowing that a guide for the wheels of one side of a waggon or carriage will in all cases answer as well as a guide for the wheels of each side; besides which, there is a difference of about eight inches in the span of axles as constructed in different states and places. This circumstance influenced me in favor of furrowing or guttering one track only, as, by the other track being left plain, vehicles cannot be injured by binding in the track. Again, in turning out, when one track alone is guttered, one half the labor only is necessary to overcome the obstacle. And further, by carriages entering upon the tracks, one only will be injured, and the jolts be less, where one gutter alone is dropped into. Add to all this, that one gutter will only cost half the amount of two, and I imagine the public will sanction the preference I have given.

As to tying the tracks together in the manner of railroad sills of wood, agreeably to Mr. Hartman's plan, and which is recognized in my patent, I shall not recommend it until experiment shall prove the necessity of it, not only on account of its expensiveness, but because almost every man's experience will convince him that at those intersections of timber against timber, decay will commence. At present I believe that timber well bedded in the road formation will be still enough and last longer, much longer, than for timber to be against timber. Where timbers are spliced, dowels or clamps may be necessary to join them, and where the substratum is likely to be soft, cross-blocks, of such a size as will support the joint, will be necessary.

In respect to forming the groove or gutter in the stick or out of the solid, I prefer it for similar reasons, as I am certain that the timber will be less likely to decay than where, by "attaching cheeks or sides to a plain surface," furrows or gutters are formed. All holes bored in timber, whether filled with spikes or trenails, and all joints or cracks in timber, should be carefully avoided, if we attend to the durability of it, particularly if exposed to the weather. And further, gutters or guides formed out of the solid will be less liable to derangement than those formed of "attached cheeks or sides," and I question if they will cost more, as laid timber may be ploughed as well as land, and in much the same way, and grooved as boards are grooved, and that by any sufficient motive power.

I hope, sir, that all those editors who have noticed Mr. Hartman's communication will give publicity to the above, as it will be adding interest to a subject of vital importance to the Union, and particularly those districts of it where stone is scarce and timber is plenty. The cheapness of the plan need not be doubted, and the liability of good timber to wear need not be feared, for more than two years of service upon timber here put down, agreeably to Mr. Hartman's proposition, convinces me of this. As to the freedom of timber from decay, where bedded in earth, I cannot ask you to publish so long an article as the investigation of that part of the subject makes in my report above mentioned; but I must crave the favor of you to publish the enclosed certificate of Col. Johnston, received since the report was printed. Col. Johnston was Indian Agent until within five or six years, and subsequently a Canal Commissioner in this state. He is one of the most amiable men of the west.

Yours, truly, Jno. S. Williams.
Cincinnati, Ohio, Aug. 10, 1833.

CERTIFICATE.

I came into the Indian Department in the service of the United States in Indiana and Ohio, soon after the operations of General Wayne's army had ceased, and the duties of my office frequently led me to travel over the roads, bridges, and causeways, made by the troops and artificers to facilitate the transportation of the munitions of war, and keep up the intercourse between the different stations and garrisons. It is within my recollection, that for upwards of twenty years after the making of those causeways, the timbers in many of them were perfectly sound, and I have no hesitation in saying that there were cases after a lapse of thirty years where they were sufficiently so to sustain the weight of the heaviest laden waggon.

John Johnston,
Formerly Agent for Indian Affairs in
Ohio and Indiana.

Columbus, Ohio, Jan. 12, 1832.

An Act further to amend the several acts incorporating the Cincinnati, Columbus, and Wooster Turnpike Company:

Be it enacted by the General Assembly of the State of Ohio, that the President and Directors of the Cincinnati, Columbus, and Wooster Turnpike Company, be, and they are hereby authorised and empowered to construct any part of their said turnpike road on the plan of wood tracks, or timber laid lengthwise, on the principle recommended by John S. Williams, Engineer of said Company, in his report, dated December eighth, eighteen hundred and thirty one.

W. B. Hubbard,
Speaker of the House of Representatives.
Wm. Doherty,
Speaker of the Senate.

January 19, 1832.

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* The article here referred to, together with the drawings, were published in the Railroad Journal of the 11th of May last, page 292.

S. Fairman's Rotary Steam Engine, Machine for making Wrought Nails, &c. [Communicated for the American Railroad Journal.]

Lansingburgh, Aug. 15, 1833.

Dear Sir,—Having witnessed, with no small admiration, your untiring industry and zeal in helping forward to the most useful application the mental and physical resources of our country, and particularly in encouraging and bringing before the public the discoveries of mechanical genius, I take the liberty to invite your attention to some of the inventions of Simon Fairman, of this village, and sending you an advertisement of a *machine for making wrought nails* of different sizes, which I desire you to insert in your paper and all other suitable publications under your control. I think it is safe to estimate our Simon Fairman one of the most inventive mechanics now living. In the above nail machine he has exceeded many who have before spent years to effect it; but they have been years of toil unrewarded, for their object was not accomplished. Some, whom I have known even distinguished for their knowledge of mechanical philosophy, have attempted and failed. But the above nail machine is by no means the most important of his inventions: the admirers of discoveries in scientific power, or of new applications of mechanical power, are invited to call at Mr. J. Humphrey's machine shop in this village, and view a *reciprocating rotary compound steam engine*, invented and put in operation in this village, which is thought, by those who have seen it and are good judges, destined to take the place of all steam locomotives on land now in use; also, at the same place, may be seen and purchased at a low price, the *reciprocating rotary compound pump*, a new invention, by the same man, and now in use, which offers to the public a convenience not liable to be "*out of order*" or "*frozen up*," to which mankind have heretofore been strangers. Also, a *fluting machine* has been invented by said Fairman, which will greatly abridge the manual labor employed in preparing an important part of the machinery used in cotton factories. This last machine was long in successful and useful operation, but was destroyed in the late disastrous fire at Waterford.

Now, sir, it is an act of justice due to such inventive geniuses, who with bold and adventurous canvass dare to sail in unknown oceans, or with equally bold conceptions and courageous daring, venture beyond those bounds which have hitherto limited, circumscribed, confined, and hedged in, the operations of the faculties of other men, to bring them before the public, while living under the most favorable circumstances. It is a small reward for being made the subject of scepticism, criticism, and witticism, of those who, but for the manifestation of a bold and adventurous genius, might have been their friends and helpers.

It is a small compensation for taking the "heir loom of the poets," and all its inconveniences and mortifications, which has almost uniformly been the scourge of discoverers in the field of science and of art, as well as in the field of fancy and imagination. It is but a small reward for being made the victim of the deceptious promises of those who possess the means of alleviating the sufferings of genius, made to obtain without compensation the benefit of her superior skill, exertions, and sacrifices, while the possessor of genius is left to go supperless to bed, and his wife and children endure the want of the necessaries of life.

I do not say that this is the case of my neighbor, to whose history and circumstances I am a stranger. But if he has not had, or does not have something of this kind to complain of, he will enjoy a happy exemption from the common lot of his fellow adventurers in the same ship, from the days of Copernicus or the Marquis of Worcester to this day. I will, therefore, as one advocate of genius neglected, thank you, friend Miner, to lend a helping hand, to bring into more general notice an inventive genius of no ordinary skill and talent; by inviting the wise and skilful to call at the above named place in this village, and view some of the productions of Fairman's inventive mind and skilful hand, which they will not fail to admire and approve, whatever they may think of their final results.

Yours, respectfully, F. F. W.

P. S.—As soon as possible you may expect a drawing of the steam engine and pump.

Internal Improvements in Virginia.—It is indeed gratifying to learn that the Petersburg Railroad, in the "Old Dominion," has *really* produced a spirit of enterprize amongst those who, above all others—the planters, the owners of the soil—are most to be benefitted by such works. The great success of that road, as demonstrated below, will unquestionably produce, not only a spirit of inquiry into the immense advantages of such works to those who cultivate the soil, but also a spirit of *action*, which will ultimately render the Southern States as famous for their *high* state of cultivation as they now are for the reverse.

We know, from observation, that Virginia possesses *superior* advantages in the mildness of her climate, great *natural* fertility of her soil, and numerous rivers, affording an immense water power for manufacturing purposes, over her northern neighbors; and are satisfied that Virginians require only to be made sensible of the effect that an improvement of these advantages will produce upon the value of each man's property, to step forward, with a determination not easily to be diverted from its purpose, and with *united* effort, undertake—and not *only undertake*, but also *execute*—such preliminary works as will naturally lead to the construction of others.

The following statement of the performance of the "Liverpool," locomotive, must be highly satisfactory and gratifying to the friends of Railroads.

To the Editors of the Intelligencer:

Gentlemen,—The following account of the performance of one of our engines will, no doubt, interest you and some of your readers.

On Monday last the Liverpool brought in a train, consisting of fifteen cars and one coach, carrying 127 bales of cotton, 364 bushels of wheat, 162 bushels of corn, and about 30 persons, including passengers and agents of the Company. The gross weight in motion may be summed up as follows:

Produce and passengers,	-	83,620 lbs.
Cars, coach, engines, &c.	-	67,500
		151,120

or nearly 67½ tons. The weight of produce alone was upwards of 35 tons. This load was put in motion with great ease by the engine, and on level grades was carried at a speed of 15 miles per hour. It was twice set in motion on ascents of 30 feet to the mile, (on which we had occasion to stop to set down passengers,) and carried up them at a rate varying from 8 to 10 miles the hour.

This is the largest load which has ever been carried on the road at any single time, and when we compare it with the small size of the engine, and consider the various ascents on the Railroad, it may well be called immense. The Liverpool weighs about 5 tons, and has nine-inch cylinders, with a stroke of 18 inches, and drives her four wheels. Her general working pressure is 50 pounds, ranging up to 60, at which the lock-up valve blows off. I add these technical details in order that the performance of this engine may be justly appreciated by professional men.

Our steamboat has arrived at Blakely, and in the course of a few days we will open the road to the Roanoke. Of this desirable event we will of course give due notice through your advertising columns. Yours, respectfully,

Henry D. Bird.

Our readers may remember that, during the last winter, the Legislature ordered a survey of the Nottoway River, from its highest navigable point to its intersection with the Petersburg Railroad. We published some weeks ago the report of a party of gentlemen, who had explored the river in a large boat, and whose experiment afforded proof of the entire practicability of removing all obstructions to its navigation. Since that period, an intelligent Engineer has been engaged, under the authority of the Board of Public Works, in making a critical survey of the river, to whose politeness we are indebted for the annexed results of his labors. Mr. Thompson has described so clearly the advantages of this improvement, and the facility with which they may be realized, that we cannot believe that the planters on the Nottoway will any longer hesitate to take the necessary steps to insure the completion of a work in which they have so deep an interest.

Petersburg, August 21, 1833.

Gentlemen,—It is with pleasure I comply with the request to furnish you with the result of the survey and estimate for the contemplated improvement of the Nottoway River, from the Great Falls to the Railroad, a distance of 66 miles 613 yards: in which distance it flows through one of the richest and most fertile sections of country in the State of Virginia—and from the smallness of the amount required to open a useful navigation, and afford the planters in that section an easy, cheap, and expeditious mode of getting their produce to market, would lead to the hope that the work would be immediately and vigorously commenced, the advantages of which are almost incalculable, when compared with their present tardy mode of transportation over a wretched road, requiring twenty per cent. of the actual value of the article to land it at market.

There are 25 miles of slack-water navigation on the river, occasioned by the different mill-dams, which are probably rather an advantage than an injury, as they back the water over many shoals and falls in that distance. The locks are supposed 60 feet long, 8 feet wide, built of wood—sustained by dry walls, where the strength of the current or other circumstances may render it necessary. They last under ordinary circumstances from 8 to 10 years; when the increased amount of produce will, no doubt, warrant a more permanent structure. The river (independent of the locks in the different dams) will only require cleaning out, and occasionally wing dams to deepen the water on the shoals; the total cost of which is $29,406.

In a communication from gentlemen *above* the Forks of Nottoway, they state, that in the event of the river being made navigable, from that section of country alone they can send 2000 hhds. of Tobacco, and 60,000 bushels of wheat. From the forks to the railroad, a distance of 56 miles, there is an exceedingly fertile country, which would add largely to the above amount—with a yearly increase on the whole amount from the increased facilities of transportation; which would seem to place beyond all doubt a handsome interest on the investment. At the very lowest calculation the saving to the planter will exceed 50 per cent. on the present cost of waggoning his tobacco, and on wheat in a much greater proportion.

Your obt. servant, W. B. THOMPSON.

Whilst upon the subject of the performance of Locomotive Engines, we will add one or two others equally interesting with the preceding, which must certainly convince any one who may have entertained doubts of their ultimately becoming in general use upon all railroads which are now, or may hereafter be, constructed in this country.

The first is from the Baltimore Gazette, and the other from the National Gazette.

LOCOMOTIVES ON RAILROADS.—Every friend of Internal Improvements will be gratified by reading the articles in this day's Gazette—one extracted from the National Gazette, the other from the Petersburg Intelligencer—giving accounts of the performance of locomotive engines on two of the railroads in the United States. We hope, however, that they will not be less gratified to learn, that a comparison highly favorable to American genius, talent, and industry, may be made between the performances of imported engines and those constructed in our own country. We feel it to be proper to draw the attention of the American people—and more especially the people of Baltimore—to this comparison, as we have often heard complaints made of the Directors of the Baltimore and Ohio Railroad, for not importing locomotives from England.

We found, on referring to our files of last July, that the performance of the Atlantic, steam engine, on the Baltimore and Ohio Railroad, will bear a most favorable comparison with the best efforts of the most celebrated English engines on any of our railroads. The Atlantic, it should be remembered, is entirely of American manufacture, both as to construction and design, and can fairly compete, in all the essentials, with the best locomotive of any other country. The following is an extract from the account of her performance, published in this Gazette last July:

The Atlantic has been running continually for the last three or four months, from Baltimore to the foot of the Inclined Planes, a distance of 40 miles, and back again, the same day. Upon this portion of the road, 33 miles are ascending, at various grades, of from ten to forty feet per mile, exceeding, in the ascent, 20 feet per mile, *on the average*, and the whole forty miles is almost a constant succession of curves, of 400 feet radius, and upwards. Upon this road the Atlantic has drawn, *on the outward, or ascending trip, thirty tons, at the least, at the rate of seventeen miles per hour*; with only 15 tons, her practical speed exceeds any safe limit on a curved road. The Atlantic has drawn 92 tons on a *level*, at a speed of nine miles to the hour, and has brought 72 tons from the half-way house, (six miles,) to Baltimore, at a rate of twelve miles to the hour, on the level parts of the road; passing two summits, of 16 feet per mile, for a half mile each, at the rate of six miles an hour. The motion of the piston compared with that of the wheels, or progressive motion of the engine, is as 1 to 5½. The fuel employed is Anthracite Coal, which burns without any difficulty, and it is believed with more economy and convenience than any other. The trip, of 80 miles per day, is performed with one ton of it. Although this engine is the first of this peculiar construction, and the first that has completely succeeded in burning the Anthracite, yet—in the small amount of its repairs, and the quantity of work that it is capable of performing—it is believed to be equal, if not superior, to any engine that has yet been made.—[Balt. Gazette.]

From the outset of the discussions and enterprizes in relation to Railroads and Locomotive Engines, we have been powerfully struck with the wonderful effects of which they seemed likely to be productive. As the subject has been developed in theory and practice, our attention and imagination have beeen more and more excited. All the new views and details have deepened and vivified our original impressions. We have so much confidence in American spirit, intelligence, and pecuniary resources, that we feel an assurance that the great railroads undertaken or projected, in different parts of the Union, will be duly accomplished, and realize the expectations of the most sanguine, respecting their various advantages. The moral or political, as well as the physical benefits, to accrue from them, are incalculable.

In the course of the present summer we have had occasion to be frequently in the immediate neighborhood of the Newcastle and Frenchtown Railroad, and to observe closely the management of both steamboats and land conveyance. It has constantly appeared to us so excellent that it must give universal satisfaction. The trip to and from Newcastle is generally effected in two and a half hours; sometimes in two and a quarter, or less. Last week we breakfasted at the Brandywine Springs, between six and seven o'clock; proceeded to Newcastle; reached Frenchtown, in the car line, in less than an hour; arrived at Baltimore at a quarter past two o'clock, and were again at the springs the next day before one o'clock, by the same route, having left Baltimore at six o'clock in the morning. The journey might be called imperceptible, except as to the positive gratifications of the passage. The fare on board of the steamboat is as good and as well served as that of the principal hotels in our large cities, and every attention is constantly paid to the comfort of travellers. If they suffer inconvenience, it must be from their own inobservance of the rules of mutual accommodation and general ease. The information which we casually collected touching the railroad, we now offer to our readers as it was set down in memoranda.

This road has been in operation since the 27th of February, 1832. In September, 1832, locomotive engines were permanently employed on it, and the use of horses for the transportation of passengers entirely dispensed with. The first locomotive used by the Company was called the Delaware, and was used *seventy days consecutively without losing a trip*, although a considerable portion of the time it conveyed the passengers of two lines per day across the road both ways, sixty-six miles. This fact is striking, in as much as it confutes an erroneous idea, which has obtained too generally in this country, that locomotive engines are frequently disabled, and of course do their work at a great expense. The Company has imported all its engines from England; they are from the factory of the celebrated Robert Stephenson & Co., of Newcastle-upon-Tyne. There are now, and have been all this season, three of them in use on the Newcastle and Frenchtown Railroad; a fourth has just arrived in the ship Delaware, from Liverpool.

The Company was a good deal annoyed, for a time, by the emission of sparks from the smoke-pipes of their engines; but that evil has been entirely overcome by the ingenuity of their engineer, (of locomotive power,) Edward A. Young, a native of Virginia, who has procured a patent for his invention. Thus the great desideratum in this country, of burning wood in locomotive engines, has been attained.

It is estimated that one hundred and fifty thousand persons have been transported across this road since it was put in operation, to not one of whom has the slightest accident occurred; and it is a remarkable fact, that in the whole progress of this work, from the commencement of its construction to the present day, not a single human being has suffered the loss of life or limb.

The arrangements of this Company for the transportation of their business are nearly perfect. The precision as to time with which the passengers are daily conveyed across their road, is matter of wonder; the variation is rarely, if ever, greater than five minutes—the time fixed being from 55 to 60 minutes: the distance is 16½ miles. Guards are placed along the road at convenient distances, and signal staffs erected, by means of which information can be transmitted from one end of the road to the other in *three minutes*. This is a great security as well as comfort to travellers; for it is the duty of these guards to keep all horses, cattle, &c. off the road; and in case of detention, from any cause, the telegraphic announcement of it would bring immediate succor. It is believed, however, that, with the exception of a delay caused by a snow storm, there has been but one instance of detention upon this road worthy of being mentioned, and that was when the engine passed over a cow. The recurrence of such an accident—(no injury was sustained even then by any passenger)—is rendered almost impossible by the judicious precautions above mentioned.

A single locomotive has frequently conveyed over this road upwards of two hundred passengers, with their baggage. The train of cars is often thirteen or fourteen in number, and the sight of them all in motion, conducted by the gallant little steamer, is highly picturesque and interesting.—[National Gazette.]

A Treatise on Railway Improvements. By RICHARD BADNALL, Esq. London, Sherwood & Co.

The volume now before us is of the argumentative kind, recommending the author's invention; and at p. 31, he thus describes his ideas on the subject: "The improvements in the formation or construction of railways, to which these pages principally refer, is the substitution of a curved or undulating, or, what I denominate, a 'serpentine railway, for the horizontal railway now in use. The impressions upon my mind, before the trial of any experiments, were, that by an undulating railway *a greater resistance would be opposed to the power of steam*, or any other locomotive power, than upon level railway; that much would be gained by the power of gravity multiplied by active power down a descent; and that, consequently, a locomotive engine of any power would travel at a greater speed, or drag a greater weight, than upon a horizontal railway." Such, then, is the proposition of the author, and we do not doubt that our readers will join us in expressing surprise at an invention so widely differing from all preconceived notions. In our early youth we were taught that the shortest distance between two points was a straight line; and further, as a continuation of the same proposition, that the two sides of any triangle are greater than the third. Mr. Badnall will therefore attribute the ignorance we display, in not conforming to his views, to our early education, and not to prejudice of any other kind. But to return to the subject: in p. 52, the author gives an account of a first experiment, by which he attempts to prove the utility of his invention. "I had (he says) a curve made of the following proportions: from A to B was four feet, depth of curve 2 inches; *a* is a roller, so constructed as to move easily along the curve, and to revolve upon its axis, to each end of which was attached the string *s*, which passes over a pulley at the opposite end, and a weight was attached to the string to propel the roller. The curve, it should be stated, was formed on a solid piece of wood, so that by turning it over it would be a horizontal surface of 4 feet.

"The following experiments were made

with different weights, just sufficient to move the roller along the surface when perfectly horizontal and at different inclinations.

Inclinations.	Over the horizontal plane.	Over the curves.
On a perfect level	2½ sec.	1½ sec.
Rise of 3 in. in 48 in.	3	2
" 4 in 48	5	2
" 2 in 48	5	2
" 6 in 48	6	2½

" *Thus showing that the greater the angle of the incline the longer was the time required in passing along the plane;* whilst on the curve, the same exact weight being employed at each experiment, *the speed scarcely varied, and at all times was considerably greater than upon the horizontal plane.*" We have taken the liberty of putting parts of this quotation in italics, because we consider they answer the proposition of the author. We grant the results to be sufficiently correct for argument, though they cannot be mathematically true; and we should have been surprized had they been much otherwise. But let us take experiment by experiment: first asking why he tried inclined planes against inclined planes? because his proposition is undulating railways in opposition to level or horizontal planes. In the first experiment, on a level 48 inches long, the roller was by a certain weight drawn from end to end in 2½ seconds, whilst by the same weight the same roller on the curve was drawn 48 inches in 1½ seconds, it will be evident that the roller in descending the first half of the curve would quickly get up its momentum, as would also the weight, whilst on the level plane the length of run would not more than admit the roller to arrive at its velocity; consequently this was by no means a fair trial. If the author had made a rail of 48 inches long, commencing with an inclination for the first 24 inches, the extent of rise being 2 inches, and then a descent of another 24 inches—this, if his proposition has any thing in it, would have been a more fair trial; the weight would cause the roller first to ascend 24 inches and descend the next 24 inches; and if, with such an arrangement, it had been discovered that the space of 48 inches was travelled in a less time than on a horizontal plane, we should be really inclined to look more seriously into the subject. Again, it will be seen in the second experiment, that of raising the level plane 3 inches at one end, which would produce an inclined plane of 3 inches in 48, whilst, on the other hand, in raising the curved surface 3 inches, the first half of the run would be very nearly on a level plane, and thus enable the roller to get up a momentum to meet the other half of the run, which would be an inclined plane of about 5 inches in 24; and such may be said of the other experiments of raising one end 4, 5, and 6 inches. It may be said of all the experiments described, that the length of the level plane is in no instance of sufficient length for the carriage or roller to get up its velocity till nearly to the end, whilst the carriage on the undulating road would get up its velocity by descending the first inclination. In making experiments either with a carriage or with boats, it is usual to commence marking time considerably after the same has started, so that it may be fairly considered to have got up its velocity; and had such a course been pursued in these experiments, very different results would undoubtedly have taken place. Thus, for instance, if the undulating road be 100 feet, and the horizontal plane be 100 feet, the speed or time ought not to be noticed till the carriage had travelled 40 or 50 feet; for the time of running of the carriage on the respective road should be only compared for the last 50 or 60 feet. In page 87, a quotation is given from Mr. Wood's admirable work on Railroads. The present author states that Mr. Wood (p. 202, second edition) calculates the resistance up a plane to be a given amount, say 56, and down the plane a given amount, say 22, and then draws his mean resistance or friction upon a level plane 39—thus:

$$\frac{56+22}{2} = 39$$

Mr. Badnall disputes this calculation of Mr. Wood, and states that the two powers of resistance added together and divided cannot show the mean resistance; he then says, "*I name this, because it particularly bears upon the principle on which I found my improvements; for if Mr. Wood be correct, it appears to me impossible that any advantage could accrue from the adoption of a curved or undulating line of road.*"

We finish our remarks with this last quotation, because it clearly expresses our opinion.—[Repertory of Arts.]

PATENT TINNED LEAD PIPES.—An article under this name is mentioned in the London papers, which seems likely to supercede the use of all other metals which hitherto have been employed for conduits. To lead alone, in pipes, cisterns, &c it is well known that the most serious objections exist. For instance, the action of air on lead produces oxide, which water dissolves, and thus water becomes poisonous. Similar deleterious effects are caused by leaden pipes in beer engines. It was to remedy these evils that the new process of tinning lead pipes was brought to perfection, and Messrs. J. & R. Warner, the patentees, affirm that the additional cost for the improved article is very trifling.

AMERICAN IRON.—It has been a study much attended to of late, to know the character of American and foreign iron, compared with each other.

The consumption of iron in the shape of boiler plates, and cast rails, is becoming enormous. The tenacity and character of the metal are yet to be thoroughly understood. The Baltimore iron is considered the best in the world for steamboats. As yet we do not fabricate wrought iron rails, but probably very soon shall, as machinery will be contrived to equalize the difference between the prices of American and English iron. Cast iron rails have been made with success at our own furnaces.

The American iron being melted by the heat of charcoal is allowed to be more tenacious than the English, which is melted by coke.

To put the matter completely at rest, however, very interesting experiments have been made at the apartments of the Franklin Institute, under the direction of Mr. Johnson, a scientific gentleman. The Secretary of the Treasury was authorized some years since, by an act of Congress, to expend a certain amount in constructing machines to make experiments on the tenacity of iron and other metals used in steam boilers. It was so constructed as to admit any degree of temperature up to 500 degrees Fahrenheit. Some interesting results have thus been obtained. The Pennsylvanian, who is our authority for the assertion, says it is ascertained that the tenacity of good iron *is increased* by the application of any degree of heat under 450 degrees, which is contrary to previous entertained opinions. Some Tennessee iron (from the Cumberland works) was found equal to a resistance of from 59,000 to 64,000 pounds the square inch! The Pennsylvania and Connecticut iron exhibited the same qualities. No iron from our state was sent on for trial. We hope some of our proprietors of forges will not forget to submit specimens of their iron to the test of these experiments.

It was also found that common American iron was better than the best British, and the best American equal, and generally superior, to Swedish and Russian.—[Albany Daily Advertiser.]

WONDERFUL INVENTION.—A watchmaker of the name of Buschmann, living at Elsenburg, not far from Attenburg, in Saxony, has contrived a piece of machinery, which, without the assistance of steam, has been found strong enough to move a heavily laden waggon, placed in a fresh ploughed field, with the greatest ease, although sixteen horses could not stir it. The machine may be easily handled, and the vehicle moved by it most safely managed. The inventor has been offered $200,000 for the secret; but as he had obtained patents from all the principal German governments, he has refused all offers.—[Danville Reporter.]

NEW INVENTION.—A gum elastic cloak, lined with silk, has been invented in Baltimore. It is intended to be thrown over the shoulders in wet weather, and will effectually shield the person and clothes of the wearer. When not wanted, it can be folded up into a very small bulk, and, on this account, must be found very useful and convenient. We mean to have one ordered on for our own use, so as to be ready for the next fall elections.—[Cin. Rep.]

CUT FLOWERS.—To more conveniently enjoy the sight of flowers, they are often plucked and placed in jars of water in the dwelling. By changing the water, or adding alkalies every day, they may be perpetuated without fading for many days, even to the period of falling from the parent stem. Lime, magnesia, or soda, may be used in moderate quantities, such as to give natural sustenance to the detached shoots in preservation. They may be made a luxuriant and appropriate ornament to the drawing-room or parlor; and in the more humble dwelling of the laborer, how cheerful appears the white-washed room and broad fire-place,

> "Whose hearth, except when winter chills the day,
> With aspen boughs, and flowers, and fennel gay,"

throws out its soft perfume to the air.—[Ulmus.]

NEW PADDLE WHEEL.—A model of a newly invented paddle wheel for boats, which avoids the lifting of water, as in ordinary paddles, is now to be seen in the Hall of the Franklin Institute, Philadelphia. The inventors say that these paddles are brought into the water less obliquely than the common kind, and from the time they are vertical with the axis of the wheel retain a perpendicular position, until they are out of the water. This result is alleged to be the effect of a simple contrivance. The machine may be constructed of any requisite strength.

Babbage on the Economy of Manufactures.

[Continued from page 504.]

181. Some farther reflections are suggested by the preceding analysis; but it may be convenient, previously, to place before the reader a brief description of a machine for making pins, invented by an American. It is highly ingenious in point of contrivance, and, in respect to its economical principles, will furnish a strong and interesting contrast with the manufacture of pins by the human hand. In this machine a coil of brass wire is placed on an axis; one end of this wire is drawn by a pair of rollers through a small hole in a plate of steel, and is held there by a forceps. As soon as the machine is put in action—

1. The forceps draws the wire on to a distance equal in length to one pin: a cutting edge of steel then descends close to the hole through which the wire entered, and severs a piece equal in length to one pin.

2. The forceps holding this wire moves on until it brings the wire into the centre of the *chuck* of a small lathe, which opens to receive it. Whilst the forceps returns to fetch another piece of wire, the lathe revolves rapidly, and grinds the projecting end of the wire upon a steel mill, which advances towards it.

3. After this first or coarse pointing, the lathe stops, and another forceps takes hold of the half-pointed pin, (which is instantly released by the opening of the *chuck*,) and conveys it to a similar *chuck* of another lathe, which receives it, and finishes the pointing on a finer steel mill.

4. This mill again stops, and another forceps removes the pointed pin into a pair of strong steel clams, having a small groove in them, by which they hold the pin very firmly. A part of this groove, which terminates at that edge of the steel clams which is intended to form the head of the pin, is made conical. A small round steel punch is now driven forcibly against the end of the wire thus clamped, and the head of a pin is partially formed by compressing the wire into the conical cavity.

5. Another pair of forceps now removes the pin to another pair of clams, and the head of the pin is completed by a blow from a second punch, the end of which is slightly concave. Each pair of forceps returns as soon as it has delivered its burden; and thus there are always five pieces of wire at the same moment in different stages of advance towards a finished pin. The pins so formed are received in a tray, and whitened and papered in the usual manner. About sixty pins can thus be made by this machine in one minute; but each process occupies exactly the same time in performing.

182. In order to judge of the value of such a machine, compared with hand labor, it would be necessary to inquire: 1. To what defects pins so made are liable? 2. What advantages they possess over those made in the usual way? 3. What is the prime cost of a machine for making them? 4. What is the expense of keeping it in repair? 5. What is the expense of moving it and attending to it?

1. Pins made by the machine are more likely to bend, because as the head is punched up out of the solid wire, it ought to be in a soft state to admit of this process. 2. Pins made by the machine are better than common ones, because they are not subject to losing their heads. 3. With respect to the prime cost of a machine, it would be very much reduced if numbers should be required. 4. With regard to its wear and tear, experience only can decide the question: but it may be remarked, that the steel clams or dies in which the heads are punched up will wear quickly, unless the wire has been softened by annealing; and that if it has been softened, the bodies of the pins will bend too readily. Such an inconvenience might be remedied, either by making the machine spin the heads and fix them on, or by annealing only that end of the wire which is to become the head of the pin: but this would cause a delay between the operations, since the brass is too brittle while heated to bear a blow without crumbling. 5. On comparing the time occupied by the machine with that stated in the analysis, we find, except in the process of heading, if time alone is considered, that the human hand is more rapid. Three thousand six hundred pins are pointed by the machine in an hour, whilst a man can point fifteen thousand six hundred in the same time. But in the process of heading, the rapidity of the machine is two and a half times that of the human hand. It must, however, be observed, that the process of grinding does not require the application of force to the machine equal to that of one man; for all the processes we have described are executed at once by the machine, and one laborer can easily work it.

ON THE DIVISION OF MENTAL LABOR.

183. We have already mentioned what may, perhaps, appear paradoxical to some of our readers,—that the division of labor can be applied with equal success to mental operations, and that it insures, by its adoption, the same economy of time. A short account of its practical application, in the most extensive series of calculations ever executed, will offer an interesting illustration of this fact, whilst at the same time it will afford an occasion for showing that the arrangements which ought to regulate the interior economy of a manufactory are founded on principles of deeper root than may have been supposed, and are capable of being usefully employed in paving the road to some of the sublimest investigations of the human mind.

184. In the midst of that excitement which accompanied the Revolution of France and the succeeding wars, the ambition of the nation, unexhausted by its fatal passion for military renown, was at the same time directed to the nobler and more permanent triumphs which mark the era of a people's greatness,—and which receive the applause of posterity long after their conquests have been wrested from them, or even when their existence as a nation may be told only by the page of history. Amongst their enterprizes of science, the French government was desirous of producing a series of mathematical tables, which should facilitate the extension of the decimal system they had so recently adopted. They directed, therefore, their mathematicians to construct such tables, on the most extensive scale. Their most distinguished philosophers, responding fully to the call of their country, invented new methods for this laborious task; and a work, completely answering the large demands of the government, was produced in a remarkably short period of time. M. Prony, to whom the superintendance of this great undertaking was confided, in speaking of its commencement, observes: "Je m'y livrai avec toute l'ardeur dont j'etois capable, et je m'occupai d'abord du plan general de l'execution. Toutes les conditions que j'avois à remplir necessitoient l'emploi d'un grand nombre de calculateurs; et il me vint bientot à la pensee d'appliquer à la confection de ces tables *la division du travail,* dont les Arts de Commerce tirent un parti si avantageux pour reunir à la perfection de main-d'œuvre l'economie de la depense et du temps." The circumstance which gave rise to this singular application of the principle of *the division of labor* is so interesting, that no apology is necessary for introducing it from a small pamphlet printed at Paris a few years since, when a proposition was made by the English to the French government, that the two countries should print these tables at their joint expense.

185. The origin of the idea is related in the following extract:

C'est à un chapitre d'un ouvrage Anglais, justement celebre, (I.) qu'est probablement due l'existence de l'ouvrage dont le gouvernement Britannique veut faire jouir le monde savant;

[*An Inquiry into the Nature and Causes of the Wealth of Nations, by Adam Smith,*]

Voici l'anecdote: M. de Prony s'etait engage, avec les comites de gouvernement, a composer pour la division centesimale du cercle, des tables logarithmiques et trigonometriques, qui, non seulement ne laissassent rien a desirer quant a l'exactitude, mais qui formassent le monument de calcul le plus vaste et le plus imposant qui eut jamais ete execute, ou meme concu. Les logarithmes des nombres de 1 a 200,000 formaient a ce travail un supplement necessaire et exige. Il fut aise a M. de Prony de s'assurer que, meme en s'associant trois ou quatre habiles co-operateurs, la plus grande duree présumable de sa vie, ne lui suffirai pas pour remplir ses engagements. Il etait occupe de cette facheuse pensee lorsque, se trouvant devant la boutique d'un marchand de livres, il appercut la belle edition Anglaise de Smith, donnee a Londres en 1776; il ouvrit le livre au hazard, et tomba sur le premier chapitre, qui traite de *la division du travail,* et ou la fabrication des epingles est citee pour exemple. A peine avait-il parcouru les premieres pages, que, par une espece d'inspiration, il concut l'expedient de mettre ses logarithmes en *manufacture* comme les epingles. Il faisait, en ce moment, a l'ecole polytechnique, des lecons sur une partie d'analyse liee a ce genre de travail, *la methode des differences,* et ses applications a *l'interpolation.* Il alla passer quelques jours a la campagne, et revint a Paris avec le plan de *fabrication,* qui a ete suivi dans l'execution. Il rassembla deux ateliers, qui faisaient separement les memes calculs, et se servaient de verification reciproque.*

186. The ancient methods of computing tables were quite inapplicable to such a proceeding. M. Prony, therefore, wished to avail himself of all the talent of his country, and formed the first section of those who were to take part in this enterprize, out of five or six of the most eminent mathematicians in France.

First Section.—The duty of this first section was to investigate, amongst the various analytical expressions which could be found for the same function, that which was most readily adapted to simple numerical calculation by many individuals employed at the same time. This section had little or nothing to do with the actual numerical work. When its labors were concluded, the formulæ, on the use of which it had decided, were delivered to the second section.

Second Section.—This section consisted of seven or eight persons of considerable acquaintance with mathematics: and their duty was to convert into numbers the formulæ put into their hands by the first section—an operation of great labor—and then to deliver out these formulæ to the members of the third section, and receive from them the finished calculations. The members of this second section had certain means of verifying these calculations without the necessity of repeating, or even of examining, the whole of the work done by the third section.

Third Section.—The members of this section, whose number varied from sixty to eighty, received certain numbers from the second section, and, using nothing more than simple addition and subtraction, they returned to that section the finished tables. It is remarkable that nine-tenths of this class had no knowledge of arithmetic beyond its two first rules which they were thus called upon to exercise, and that these persons were usually found more correct in their calculations than those who possessed a more extensive knowledge of the subject.

187. When it is stated that the tables thus computed occupy seventeen large folio volumes, some idea may perhaps be formed of the labor. From that part executed by the third class, which may almost be termed mechanical, requiring the least knowledge and by far the greatest labor, the first class were entirely exempt. Such labor can always be purchased at an easy rate. The duties of the second class, although requiring considerable skill in arithmetical operations, were yet in some measure relieved by the higher interest naturally felt in those more difficult operations. The exertions of the first

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* Note sur la publication, proposee par le gouvernement Anglais, des grandes tables logarithmiques et trigonometriques de M. de Prony. De l'imprimerie de F. Didot, Dec. 1, 1820, p. 7.

class are not likely to require, upon another occasion, so much skill and labor as they did upon the first attempt to introduce such a method; but when the completion of a calculating engine shall have produced a substitute for the whole of the third section of computers, the attention of analysts will naturally be directed to simplifying its application, by a new discussion of the methods of converting analytical formulæ into numbers.

188. The proceeding of M. Prony, in this celebrated system of calculation, much resembles that of a skilful person about to construct a cotton or silk mill, or any similar establishment. Having, by his own genius, or through the aid of his friends, found that some improved machinery may be successfully applied to his pursuit, he makes drawings of his plans of the machinery, and may himself be considered as constituting the first section. He next requires the assistance of operative engineers, capable of executing the machinery he has designed, some of whom should understand the nature of the processes to be carried on; and these constitute his second section. When a sufficient number of machines have been made, a multitude of other persons, possessed of a lower degree of skill, must be employed in using them; these form the third section: but their work and the just performance of the machines must be still superintended by the second class.

189. As the possibility of performing arithmetical calculations by machinery may appear to non-mathematical readers to be rather too large a postulate, and as it is connected with the subject of the *division of labor*, I shall here endeavor, in a few lines, to give some slight perception of the manner in which this can be done—and thus to remove a small portion of the veil which covers that apparent mystery.

190. That nearly all tables of numbers which follow any law, however complicated, may be formed, to a greater or less extent, solely by the proper arrangement of the successive addition and subtraction of numbers befitting each table, is a general principle which can be demonstrated to those only who are well acquainted with mathematics; but the mind, even of the reader who is but very slightly acquainted with that science, will readily conceive that it is not impossible, by attending to the following example. Let us consider the subjoined table. This table is the beginning of one in very extensive use, which has been printed and reprinted very frequently in many countries, and is called *a table of square numbers.*

Terms of the table.	A. Table.	B. 1st Difference.	C. 2d Difference.
1	1		
		3	
2	4		2
		5	
3	9		2
		7	
4	16		2
		9	
5	25		2
		11	
6	36		2
		13	
7	40		

Any number in the table, column A, may be obtained, by multiplying the number which expresses the distance of that term from the commencement of the table by itself; thus, 25 is the fifth term from the beginning of the table, and 5 multiplied by itself, or by 5, is equal to 25. Let us now subtract each term of this table from the next succeeding term, and place the results in another column, (B,) which may be called first difference column. If we again subtract each term of this first difference from the succeeding term, we find the result is always the number 2, (column C;) and that the same number will always recur in that column, which may be called the second difference, will appear to any person who will take the trouble to carry on the table a few terms farther. Now when once this is admitted as a known fact, it is quite clear that, provided the first term (1) of the table, the first term (3) of the first differences, and the first term (2) of the second or constant difference, are originally given, we can continue the table of square numbers to any extent, merely by simple addition: for the series of the first differences may be formed by repeatedly adding the constant difference 2 to (3) the first number in column B, and we then necessarily have the series of odd numbers, 3, 5, 7, &c.: and, again, by successively adding each of these to the first number (1 of the table, we produce the square numbers.

191. Having thus, I hope, thrown some light upon the theoretical part of the question, I shall endeavor to show that the mechanical execution of such an engine, as would produce this series of numbers, is not so far removed from that of ordinary machinery as might be conceived. Let the reader imagine three clocks placed on a table side by side, each having only one hand, and each having a thousand divisions instead of twelve hours marked on the face; and every time a string is pulled, let them strike on a bell the numbers of the divisions to which their hands point. Let him farther suppose that two of the clocks, for the sake of distinction called B and C, have some mechanism by which the clock C advances the hand of the clock B one division, for each stroke it makes upon its own bell; and let the clock B, by a similar contrivance, advance the hand of the clock A one division, for each stroke it makes on its own bell. With such an arrangement, having set the hand of the clock A to the division I., that of B to III., and that of C to II., let the reader imagine the repeating parts of the clocks to be set in motion continually, in the following order, viz.: pull the string of clock A; pull the string of clock B; pull the string of clock C.

Repetitions of process.	Movements.	Clock A. — Hand set to I.	Clock B. — Hand set to III.	Clock C. — Hand set to II.
		Table	1st difference	2d diffrence
1	Pull A.	A. strikes.....1	....	....
	—— B.	The hand is advanced (by B.) 3 divisions	B. strikes.....3	....
	—— C.	....	The hand is advanced (by C.) 2 divisions.....	C. strikes 2
2	Pull A.	A. strikes....4	....	....
	—— B.	The hand is advanced (by B.) 5 divisions.....	B. strikes.....5	....
	—— C.	....	The hand is advanced (by C) 2 divisions.....	C. strikes 2
3	Pull A.	A. strikes.....9	....	....
	—— B.	The hand is advanced (by B.) 7 divisions.....	B. strikes.....7	....
	—— C.	....	The hand is advanced (by C.) 2 divisions.....	C. strikes 2
4	Pull A.	A. strikes....16	....	....
	—— B.	The hand is advanced (by B.) 9 divisions.....	B. strikes....9	....
	—— C.	....	The hand is advanced (by C.) 2 divisions.....	C. strikes 2

If now only those divisions struck or pointed at by the clock C be attended to and written down, it will be found that they produce the series of the squares of the natural numbers. Such a series could, of course, be carried by this mechanism only so far as the three first figures; but this may be sufficient to give some idea of the construction, and was, in fact, the point to which the first model of the calculating-engine, now in progress, extended.

192. We have seen, then, that the effect of the *division of labor*, both in the mechanical and mental processes, is, that it enables us to purchase and apply to each process precisely that quantity of skill and knowledge which is required for it: we avoid employing any part of the time of a man who can get eight or ten shillings a day by his skill in tempering needles, in turning a wheel, which can be done for six pence a day; and we equally avoid the loss arising from the employment of an accomplished mathematician in performing the lowest processes of arithmetic.

193. The *division of labor* cannot be successfully practised, unless there exists a great demand for its produce; and it requires larger capital to be employed in those arts in which it is used. In watch-making it has been carried, perhaps, to the greatest extent. In an examination before a Committee of the House of Commons, it was stated that there are a hundred and two distinct branches of this art, to each of which a boy may be put apprentice; and that he only learns his master's department, and is unable, after his apprenticeship has expired, without subsequent instruction, to work at any other branch. The watch-finisher, whose business it is to put together the scattered parts, is the only one, out of the hundred and two persons, who can work in any other department than his own.

ON THE SEPARATE COST OF EACH PROCESS IN A MANUFACTURE.

194. The great competition introduced by machinery, and the application of the principle of the subdivision of labor, render it continually necessary for each producer to be on the watch, to discover improved methods by which the cost of the article he manufactures may be reduced; and, with this view, it is of great importance to know the precise expense of every process, as well as of the wear and tear of machinery which is due to it. The same information is desirable for others, through whose hands the manufactured goods are distributed; because it enables them to give reasonable answers or explanations to the objections of inquirers, and also affords them a better chance of suggesting to the manufacturer changes in the fashion of his goods, which may be more suitable either to the tastes or to the finances of his customers. To the statesman such knowledge is still more important, as without it he must trust entirely to others, and can form no judgment, worthy of confidence, of the effect any tax may produce, or of the injury the manufacturer or the country may suffer by its imposition.

195. One of the first advantages which suggests itself as likely to arise from a correct analysis of the expense of the several processes of any manufacture, is the indication which it furnishes of the course in which improvement should be directed. If any method should be contrived of diminishing by one-fourth the time required for fixing on the heads of the pins, the expense of making them would be reduced about thirteen per cent., whilst a reduction of one half the time employed in spinning the coil of wire out of which the heads are cut, would scarcely make any sensible difference in the cost of the manufacture of the whole article. It is, therefore, obvious, that the attention would be much more advantageously directed to shortening the former than the latter process.

196. The expense of manufacturing, in a country where the machinery is of the rudest kind, and manual labor is very cheap, is curiously exhibited in the price of cotton cloth in the island of Java. The cotton, in the seed, is sold by the picul, which is a weight of about 133 lbs. Not above one-fourth or one-fifth of this weight, however, is cotton; and the natives, by means of rude wooden rollers, separate, at the expense of one day's labor, about 1¼ lb. of cotton from the seed. In this stage it is worth between four and five times its original cost: and the prices of the same substance, in its different stages of manufacture, are, for one picul: Cotton in the seed, 2 to 3 dollars—Clean cotton, 10 to 11—Cotton thread, 24—Cotton thread, dyed blue, 35—Good ordinary cotton cloth, 50.

Thus it appears that the expense of spinning in Java is 117 per cent. on the value of the raw material; that the expense of dying thread blue is 45 per cent. on its value; and that the expense of weaving cotton thread into cloth is 117 per cent. on its value. The expense of spinning cotton into a fine thread is, in England, about 38 per cent.*

197. As an example of the cost of the different processes of a manufacture, perhaps an analytical statement of the expense of the volume now in the reader's hands† may not be uninteresting, more especially as it will afford an insight into the nature and extent of the taxes upon literature. It is found economical to print it upon paper of an unusually large size, so that although thirty-two pages are really contained in each sheet, this work is still called 8vo.

To printer for composing (per sheet of 32 pages) 3*l.* 1*s.*, 10¼ sheets,		£32	0	6
To printer for composing small type, as in extracts and contents, extra per sheet, 3*s.* 10*d.*		2	0	3
To printer for composing table-work, extra per sheet, 5*s.* 6*d.*		2	17	9
Average charge for corrections per sheet, 3*l.* 2*s.* 10*d.*		33	0	0
Press-work, 3,000 being printed off, per sheet, 3*l.* 10*s.*		36	15	0
Paper for 3,000, at 1*l.* 11*s.* 6*d.* per ream, weighing 28 lbs.: the duty on paper at 3*d.* per lb. amounts to 7*s.* per ream, so that the 63 reams which are required for the work will cost: Paper, 77*l.* 3*s.* 6*d.*—Excise Duty, 22*l.* 1*s.*,		99	4	6
Total expense of printing and paper,		205	18	0
Steel plate for title page,	£0 7 6			
Engraving on steel, letters	1 1 0			
Ditto Head of Bacon,	2 2 0			
Total expense of title page,		3	10	6
Printing title page, at 6*s.* per 100,		9	0	0
Paper for ditto, at 1*s.* 9*d.* per 100,		2	12	6
Expenses of advertising,		40	0	0
Sundries,		5	0	0
Total expense in sheets,		266	1	0
Cost of a single copy in sheets,		0	1	9¼
Extra boarding,		0	0	6
Cost of each copy, boarded,		0	2	3¼

198. This analysis requires some explanation. The printer usually charges for composition by the sheet, supposing the type to be all of one kind; and as this charge is regulated by the size of the letter, on which the quantity of it in a sheet depends, little dispute can arise after the price is agreed upon. If there are a few extracts, or other parts of the work, which require to be printed in smaller type, or if there are many notes, or several passages in Greek, or in other languages, requiring a different type, these are considered in the original contract, and a small additional price per sheet allowed. If there is a larger portion of small type, it is better to have a specific additional charge for it per sheet. If any work, with irregular lines, and many figures, and what the printers call rules, occurs, it is called table-work, and is charged at an advanced price per sheet. Examples of this are frequent in the present volume. If the page consists entirely of figures, as in mathematical tables, which require very careful correction, the charge for composition is usually doubled. A few years ago I printed a table of logarithms, on a large sized page, which required great additional labor and care from the readers, in rendering the proofs correct, for which several new types were cast, although new punches were not required, and for which stereotype plates were cast, costing about 2*l.* per sheet. In this case 11*l.* per sheet were charged, although ordinary composition, with the same sized letter, in demy octavo, could have been executed at thirty-eight shillings per sheet: but as the expense was ascertained before commencing the work, it gave rise to no difficulties.

199. The charge for *corrections* and *alterations* is one which, from the difficulty of measuring it, gives rise to the greatest inconvenience, and is as disagreeable to the publisher, (if he be the agent between the author and the printer,) and the master printer or his foreman, as it is to the author himself. If the author study economy, he should make the whole of his corrections in the manuscript, and should copy it out fairly: it will then be printed correctly, and he will have little to pay for corrections. But it is scarcely possible to judge of the effect of any passage correctly, without having it set up in type; and there are few subjects to which an author does not find he can add some details or explanations, when he sees his views in print. If, therefore, he wish to save his own labor in transcribing, and to give the last polish to the language, he may accomplish these objects at an increased expense. If the printer possess a sufficient stock of type, it will contribute still more to the convenience of the author to have his whole work put up in what are technically called *slips*,* and then to make all the corrections, and to have as few revises as he can. The present work was set up in slips, but the corrections were unusually large, and the revises frequent.

200. The press-work, or *printing off*, is charged at a price agreed upon for each two hundred and fifty sheets; any broken number is still considered as two hundred and fifty. When a large edition is required, the price for two hundred and fifty is reduced; thus, in the present volume, two hundred and fifty copies, if printed alone, would have been charged eleven shillings per sheet. The principle of this mode of charging is good, as it obviates all disputes; but it is to be regretted that the custom of charging for any small number the same price as for two hundred and fifty is so pertinaciously adhered to, that the master printers cannot get their men to agree to any other terms when only twenty or thirty copies are required, or even when only three or four are wanted for the sake of some experiment. Perhaps if all numbers above fifty were charged as two hundred and fifty, and all below as for half two hundred and fifty, both parties would derive an advantage.

201. The effect of the excise duty is to render the paper thin, in order that it may weigh little; but this is counteracted by the desire of the author to make his book look as thick as possible, in order that he may charge the public as much as he decently can; and so on that ground alone it is of no importance. There is, however, another effect of this duty, which both the public and the author feel; for they pay, not merely the duty which is charged, but also the profit on that duty, which the paper-maker requires for the use of additional capital; and also the profit to the publisher and bookseller on the increased price of the volume.

202. The estimated charge for advertisements is, in the present case, about the usual allowance for such a volume; and, as it is considered that advertisements in newspapers are the most effectual, where the smallest pays a duty of 3*s.* 6*d.*, nearly one half the charge of advertising is a tax.

203. It appears, then, that upon an expenditure of 276*l.* on the present volume, 42*l.* are paid in the shape of a direct tax. Whether the profits arising from such a mode of manufacturing will justify such a rate of taxation, can only be estimated when the returns from the volume are considered, a subject that will be discussed in our subsequent pages. It is at present sufficient to observe, that the tax on advertisements is an impolitic tax, when contrasted with that upon paper, and on other materials employed. The object of all advertisements is, by making known articles for sale, to procure for them a better price, if the sale is to be by auction; or a larger extent of sale, if by retail dealers. Now the more any article is known, the more quickly it is discovered whether it contributes to the comfort or advantage of the public, and the more quickly its consumption is assured if it is found valuable. It would appear, then, that every tax on communicating information respecting articles which are the subject of taxation in another shape, is one which must considerably reduce the amount that would have been raised had no impediment been placed in the way of making known to the public their qualities and their price.

ON THE CAUSES AND CONSEQUENCES OF LARGE FACTORIES.

204. On examining the analysis which has been previously given of the operations in the art of pin-making, it will be observed, that ten individuals are employed in it, and also that the time occupied in executing the several processes is very different. In order, however, to render more simple the reasoning which follows, it will be convenient to suppose that each of the six processes there described requires an equal quantity of time. This being supposed, it is at once apparent, that, to conduct an establishment for pin-making most profitably, the number of persons employed must be a multiple of ten. For if a person with small means has only sufficient capital to enable him to employ half that number of persons, they cannot each of them constantly adhere to the execution of the process; and if a manufacturer employs any number not a multiple of ten, a similar result must ensue with respect to some portion of them. The same reasoning extends to all manufactories which are conducted upon the principle of the *division of labor*, and we arrive at this general conclusion—

When (from the peculiar nature of the produce of each manufactory) the number of processes into which it is most advantageous to divide it is ascertained, as well as the number of individuals to be employed, then all other manufactories which do not employ a direct multiple of this number, will produce the article at a greater cost. This principle ought always to be kept in view in great establishments, although it is quite impossible, even with the best system of the *division of labor*, to carry it rigidly into execution. The proportion of the persons employed who possess the greatest skill is, of course, to be first attended to. That exact ratio which is most profitable for a factory employing a hundred workmen, may not be quite the most fit for one in which there are five hundred; and probably both admit of variations in their arrangements without materially increasing the cost of their produce. But it is quite certain that no individual, nor in the case of pin-making could any five individuals, ever hope to compete with an extensive establishment. Hence arises one of the causes of the great size of manufacturing establishments, which have increased with the progress of civilization. Other circumstances, however, contribute to the same end, and arise also from the same cause—*the division of labor*.

205. The material out of which the manufactured article is produced, must, in the several stages of its progress, be conveyed from one operator to the next in succession; this can be done at least expense when they are all working in the same establishment. If the material is heavy, this reason acts with additional force; but in cases where it is light, the danger arising from frequently removing it may render it desirable to have all the processes carried on in the same building. In the cutting and polishing of glass this is the case; whilst in the art of needle-making, several of the processes are carried on in the cottages of the workmen. It is, however, clear that the latter plan, which is attended with some advantages to the family of the workmen, can be adopted only where there exists a sure and quick method of knowing that the work has been well done, and that the whole of the materials given out have been really employed.

206. The inducement to contrive machines for any process of manufacture increases with the demand for the article; and the introduction of machinery, on the other hand, tends to increase the quantity produced, and to lead to the establishment of large factories. An illus-

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* These facts are taken from Crawfurd's Indian Archipelago

† This refers to the London edition, as published by Chas. Knight.

* Slips are long pieces of paper, on which sufficient matter is printed to form, when divided, from two to four pages of text.

tration of these principles may be found in the history of the manufacture of patent net.

The first machines for weaving this article were very expensive, costing from a thousand to twelve or thirteen hundred pounds. The possessor of one of these, though it greatly increased the quantity he could produce, was nevertheless unable, when working eight hours a day, to compete with the old methods. This arose from the large capital invested in the machinery; but he quickly perceived that, with the same expense of fixed capital and a small addition to his circulating capital, he could work the machine during the whole twenty-four hours. The profits thus realized soon induced other persons to direct their attention to the improvement of those machines; and the price was considerably reduced, at the same time that the rapidity of production of the patent net was increased. If machines be kept working through the twenty-four hours, it will be necessary that some person shall attend to admit the workmen at the time they relieve each other; and whether the porter or other servant so employed admit one person or twenty, his rest will be equally disturbed. It will also be necessary, occasionally, to adjust or repair the machine; and this will be done much better by a workman accustomed to machine making, than by the person who uses it. Now, since the good performance and the duration of machines depend to a very great extent upon correcting, as soon as it appears, every shake or imperfection in their parts, it will soon become apparent that a workman resident on the spot will reduce the expenditure arising from the wear and tear of machinery. But in the case of a single lace-frame, or a single loom, this would be too expensive a plan. Here, then, arises another circumstance which tends to enlarge the extent of a factory. It ought to consist of such a number of machines as sha'l occupy the whole time of one workman in keeping them in order, and in making any casual repairs: if it is extended beyond this, the same principle of economy would point out the necessity of doubling or tripling the number of machines, in order to employ the whole time of two or three skilful workmen.

207. Where one part of each workman's labor consists in the exertion of mere physical force, as in weaving and many similar arts, it will soon occur to the manufacturer, that if the loom or lace-frame were driven by a steam-engine, the same man might attend to two or more looms at once; and since we already suppose that he already employed one or more operative engineers, he may so arrange the number of his looms that the charge of keeping them and the steam-engine in order shall just fully occupy their time. One of the first effects will be, that the steam-engine can drive the looms twice as fast as human force; and as each man, when relieved from bodily labor, can attend to two looms, it will be found that one workman can now make as much cloth as four could do before. This increase was, however, greater than that which really took place at first; for the limit of the velocity of the parts of the loom depended upon the strength of the thread, and the quickness with which it commenced its motion: but an improvement was soon made, by which the motion commenced slowly, and gradually acquired greater velocity than it was safe to give it at once. This improvement increased the speed from 100 to about 120 strokes per minute.

208. Pursuing the same principles, the manufactory becomes gradually so enlarged, that the expense of lighting during the night amounts to a considerable sum; and as there are already attached to the establishment persons who are up all night, and can, therefore, constantly attend to it, and also engineers to make and keep in repair any machinery, the addition of an apparatus for making gas to light the factory introduces a new extension, at the same time that it contributes, by diminishing the expense of lighting, and the risk of accidents by fire, to reduce the cost of manufacturing.

209. Long before a factory has reached this extent, it will have been found necessary to establish an accountant's department, with clerks to pay the workmen, and to see that they arrive at their stated times; and this department must be in communication with the agents who purchase the raw produce, and with those who sell the manufactured article.

210. It would be of great importance, if, in every large establishment, the modes of paying the different persons employed could be so arranged, that each should derive advantage from the success of the whole, and that the profits of the individuals should advance as the factory itself produced profit, without the necessity of making any change in the wages agreed upon. This is by no means easy to effect, particularly amongst that class whose daily labor procures for them their daily meal. The system which has long been pursued in working the Cornish mines, although not exactly fulfilling these conditions, yet possesses advantages which make it worthy of attention, as having considerably approached towards them, and as tending to render fully effective the faculties of all engaged in it.

211. In the mines of Cornwall, almost the whole of the operations both above and below ground are contracted for. The manner of making the contract is nearly as follows. At the end of every two months, the *work* which it is proposed to carry on during the next period is marked out. It is of three kinds. 1. *Tut-work*, which consists in sinking shafts, driving levels, and making excavations; this is paid for by the fathom in depth, or in length, or by the cubic fathom. 2. *Tribute*, which is payment for raising and dressing the ore, by means of a certain part of its value when merchantable. It is this species of payment which produces such admirable effects. The miners, who are to be paid in proportion to the richness of the vein, and the quantity of metal actually extracted from it, naturally become quick-sighted in the discovery of ore, and in estimating its value; and it is their interest to avail themselves of every improvement that can bring it more cheaply to market. 3. *Dressing*: The tributors, who dig and dress the ore, can seldom afford to dress the coarsest parts of that which they raise at their contract price; they, therefore, leave it, and this portion is again let out to persons who agree to dress it at an advanced price. The lots of ore to be dressed, and the works to be carried on, having been marked out for some days, and having been examined by the men, a kind of auction is kept by the captains of the mine, in which each lot is put up, and bid for by different gangs of men. The work is then offered, at a price usually below that bid at the auction, to the lowest bidder, who rarely declines it at the rate proposed. The tribute is a certain sum out of every twenty shillings' worth of ore raised, and may vary from three pence in the pound to fourteen or fifteen shillings. The rate of earnings in tribute is very uncertain: if a vein, which was poor when taken, becomes rich, the men earn money rapidly; and instances have occurred in which each miner of a gang has earned a hundred pounds in two months. These extraordinary cases are, perhaps, of more advantage to the owners of the mine than even to the men; for whilst the skill and industry of the workmen are greatly stimulated, the owner himself always derives greater advantage from the improvement of the vein.* This system has been introduced, by Mr. Taylor, into the lead miles of Flintshire, into those at Skipton, in Yorkshire, and into some of the copper mines of Cumberland; and it is desirable that it should become general, because no other mode of payment affords to the workmen a measure of success so directly proportioned to the industry, the integrity, and the talent, which they exert.

212. We have seen that the application of the *division of labor* tends to produce cheaper articles: it thus increases the demand, and gradually, by the effect of competition, or the hope of increased gain, causes large capitals to be embarked in extensive factories. Let us now examine the influence of such accumulation of capital directed to one object. In the first place it enables the most important principle on which the *division of labor* rests, to be carried almost to its extreme limits: not merely the precise amount of skill is purchased which is necessary for the execution of each process, but throughout every stage from that in which the raw material is procured, to that by which the finished produce is conveyed into the hands of the consumer, the same economy of skill prevails. The quantity of work produced by a given number of people is greatly augmented by such an extended arrangement; and the result is necessarily a great reduction in the cost of the article which is brought to market.

213. Amongst the causes which tend to the cheap production of any article, and which require additional capital, may be mentioned the care which is taken to allow no part of the raw produce, out of which it is formed, to be absolutely wasted. An attention to this circumstance sometimes causes the union of two trades in one factory, which otherwise would naturally have been separated. An enumeration of the arts to which the horns of cattle are applicable, furnishes a striking example of this kind of economy. The tanner, who has purchased the hides, separates the horns, and sells them to the makers of combs and lanterns. The horn consists of two parts, an outward horny case, and an inward conical-shaped substance, somewhat intermediate between indurated hair and bone. The first process consists in separating these two parts, by means of a blow against a block of wood. The horny exterior is then cut into three portions by means of a frame-saw.

1. The lowest of these, next the root of the horn, after undergoing several processes, by which it is rendered flat, is made into combs.

2. The middle of the horn, after being flattened by heat, and its transparency improved by oil, is split into thin layers, and forms a substitute for glass in lanterns of the commonest kind.

3. The tip of the horn is used by the makers of knife-handles and of the tops of whips, and for other similar purposes.

4. The interior, or core of the horn, is boiled down in water. A large quantity of fat rises to the surface; this is put aside, and sold to the makers of yellow soap.

5. The liquid itself is used as a kind of glue, and is purchased by the cloth-dressers for stiffening.

6. The bony substance, which remains behind, is then sent to the mill, and, being ground down, is sold to the farmers for manure.

Besides these various purposes to which the different parts of the horn are applied, the clippings, which arise in comb-making, are sold to the farmer for manure at about one shilling a bushel. In the first year after they are spread over the soil they have comparatively little effect, but during the next four or five their efficacy is considerable. The shavings which form the refuse of the lantern-maker are of a much thinner texture: a few of them are cut into various figures and painted, and used as toys, for, being hygrometic, they curl up when placed in the palm of a warm hand. But the greater part of these shavings are sold also for manure, which, from their extremely thin and divided form, produces its full effect upon the first crop.

A Petrifacion.—Baron Steuben died of apoplexy at Steuben, Oneida Co. N. Y. in November 1795.—Agreeably to his request his remains were wrapped in his cloak, enclosed in a plain coffin, and deposited in a grave without a stone. Many years after, as we learn by a memoir in the N. Y. Com. Advertiser, his body was disinterred for the purpose of burial in another place and it was found to have passed into a state of complete petrifaction, and is believed to remain in that state of preservation to this day. The features of his face were as unchanged as on the day of his interment.

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* For a detailed account of the method of working the Cornish mines, see a paper of Mr. John Taylor's, 'Transactions of the Geological Society,' vol. ii. p. 309.

NEW-YORK AMERICAN.

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LITERARY NOTICES.

On the Penitentiary System of the United States, and its applicaton in France, with an Appendix, &c. by G. de Beaumont, and A. de Toqueville; translated from the French, with an Introduction, Notes, &c. by Francis Lieber: 1 vol. 8vo. Philadelphia, Carey, Lea & Blanchard.—Most of our readers will remember the journey which the authors of this book made a year or two ago, to this country, by order of their government, with a view of ascertaining, by actual inspection and inquiry on the spot, the principles and operation of our penitentiary systems. The volume before us is an abstract of these inquiries, furnishing the conclusions at which the commissioners arrived, and some of the documents on which those conclusions rest. It is not the report made to their government, for that was in much greater detail—but the summing up as it were of the whole matter. As Americans, we have great reason to be satisfied with the tone of this work, and with the facts so creditable to the practical good sense and humanity of our people, which it sets forth. It is but just to say too, that the whole inquiry seems to have been conducted by those enlightened Frenchmen with an absence of prejudice or preconceived theories—alike rare on such occasions, and commendable. Their aim was the truth, and that they steadily pursued wherever it might lead. The penitentiary system is one of the contributions of America to the cause of humanity; and full credit is given us for it in these pages: and the principle upon which it rests, that of combining labor with individual isolation and solitude, is probably perfect, the only difference now being in the modes of applying this principle. In Pennsylvania, each prisoner is confined in a separate cell, which he never leaves, performing there the task assigned him, and ignorant of all around him, never seeing nor being seen by his fellow-convicts. In this State, according to what is known as the Auburn system, each prisoner is, in like manner, confined at night in a separate cell, but eats and works in public, that is, with all the other prisoners; but complete silence is inexorably enforced: a word, a sign, a look of intelligence exchanged between convicts, is punished on the spot with severe whipping. In this manner, a thousand convicts march to and from their cells, their refectory, and their workshops, as if they were so many shadows. The respective advantages of these systems are yet perhaps to be determined; though thus far the preference has been decidedly given to that of *Auburn* by all the States which have recently established penitentiaries. The French Commissioners also incline to that system. The intelligent translator, however, *Dr. Lieber*, prefers that of Pennsylvania, as upon the whole more soothing and sure. In an introductory article Dr. Lieber urges with zeal and unanswerable arguments, the great importance towards perfecting the Penitentiary system, of *Houses of Detention.* On this subject we shall again have occasion to refer to this work, which we must now dismiss with warm commendation of its usefulness and value—both of which are added to by the copious notes of the translator.

The Book of the Nursery, with Precepts for the Management of Infants, &c. By Walter C. Dendy, Member of the Royal College of London, &c. &c. New-York, Wm. Jackson.—This republication presents to mothers and nurses a judicious treatise, without any parade of professional learning, on the proper mode of bringing up infants, morally and physically;—we say morally, for it is hardly suspected by other than the most observing parents, how soon the infant is susceptible of moral impressions. It is a neat little volume, too, and well printed.

The Abbess, a Romance, by Mrs. Trollope. 2 vols. *Harpers.*—The last miserable production of Mrs. Trollope in the way of a novel, the Refugee, led us to open the one before us with no very great expectation of interest or amusement. The Abbess, however, is by no means deficient in merit. The conception of the story is rather original, and it is managed occasionally with a good deal of skill. A brief extract will give some idea of the style and incident which characterize the book. The following scene represents the well known ceremony attending the punishment of a nun for having broken her vows:—

* * *

As soon as the Abbots had reached their respective stalls, and the priests their stations at the altar, Camilla was led to the front of it, by the men who had been employed to prepare her for the ceremony of degradation.

A stool was placed at the distance of a few yards from the lowest step of the altar, and on this the unhappy Camilla was seated, in the full dress of her order, and with her veil thrown completely over her. The rule she was said to have transgressed was written on parchment, and held up before her by an aged sister of the convent.

The community lined the two sides of the nave, leaving a wide space between them, in the middle of which was a bier, with a black pall thrown across it.

As soon as Camilla was seated, the two lines chanted in low and dismal cadence, the alternate verses of the Miserere, pausing long between each verse. During these pauses, the stranger monks took off the veil, hood, and robe of Camilla, leaving her unclothed, save by a long tunic of white cloth, which reached from the throat to the feet. Her religious habit was torn asunder into many fragments, and scattered on the floor.

The sentence recorded against her was then read aloud in Latin, and three times repeated. She was now commanded to rise, and the procession began. It was preceded by a priest, who carried a large cross reversed. The sisterhood followed, two and two, each bearing in her hand an extinguished torch. Then came the pale Camilla, in her white shroud-like garment, supported on each side by a sable mute. Next followed two priests, one carrying incense, the other holy water; and last, the two mitred Abbots closed the line.

The march was slow and solemn. Each nun, her head sunk in her bosom, and her veil closely drawn round her, recited in a low whisper the prayers for the dying.

In this order they passed down the side aisle, and up to the centre of the nave where stood the bier. The nuns again divided into two lines, taking their station as before. Camilla, pale, motionless, and seemingly unconscious of what was passing, was raised without a struggle in the arms of the mutes, and placed upon the bier, where she lay perfectly still and unresisting while the assistant priests spread the funeral pall over her.

This ceremony completed, the solemn service for the dead was heard from the altar; and when this ended, the thrilling words, "*Requiem æternam dona ei, Domine!*" burst forth in full chorus from the nuns.

When the Requiem ceased, a silence like that of the grave ensued, and lasted till time sufficient had been allowed for each to breathe an inward prayer.

Then a signal was given to the nuns, who immediately retired with slow and noiseless steps, not one of them daring to throw a farewell glance to the poor wretch, who, warm in life and youth, was now to be interred within her horrid tomb. All the assistants followed, except the mutes, the stranger priests, whose unpitying services were still required, and the two judges, who were bound to see the final execution of their sentence.

As soon as the doors of the chapel were closed, Isidore gave a signal to the men. The bier was lifted on their shoulders, and borne through the iron door into the vaults.

It was, as Geraldine had supposed, within the massive depth of the wall which guarded the building from the sea, that the living tomb was fabricated, and the dark aperture now yawned before them; its horrors rendered visible by the pale light of a wax taper that burned within it, near which was placed a pitcher of water, and a small loaf of bread.

The bier was placed on the earth—the pall was removed: but the assistants started back as they withdrew it, exclaiming—

"She is already dead!"

"Then bury her," said Isidore, with horrid calmness.

Camilla was again raised in the arms of her executioners, who bore her forward to the dark recess: the cool air revived her strength, and the friendly faintness forsook her; she opened her eyes upon the scene, and all its terrors seized her heart at once. For a moment she looked wildly on them all, and then uttered a shriek, which left its sound within the ears that heard it as long as life remained. Yet it did but hasten the deed. Startled, but not softened, by that dismal cry, the men threw her from their arms, and instantly began the frightful work that was to shut out the air of life for ever.

The wretched woman sprang upon her feet—the stones were rolled against her—she raised her helpless arms, and madly strove to impede the savage work—in vain. A few short moments hid her from their sight, and a few more restored the treacherous wall to the same look of harmlessness as its neighbors.

The Martyrs' Triumphs, the Buried Valley, and other Poems, by Grenville Mellen. Boston: *Lilly, Wait, Colman & Holden.* 1 vol. 12mo. pp. 300.—We have looked over this elegantly printed volume with a great deal of pleasure. If elevated and chastened imagination, glowing language, and melodious versification constitute true poetry, the collection which Mr. Mellen puts forth with so modest a preface is well entitled to the name. We remember but few happier verses on the same subject in the range of English poetry, than the following from a fine lyric, in the book before us, entitled "The Host of Night":

Look at the host of night—
These silent stars!
What have they known of blight,
Or heard of wars!

Were they not marshall'd there,
These fires sublime,
Gemming the midnight air
Ere earth knew time!

Shine they for aught but earth,
These silent stars!
And when they sprang to birth,
Who broke the bars,

And let their radiance out,
To kindle space?
When rang God's morning shout
O'er the glad race!

Are they imbedded there,
These silent stars!
Or do they circle air
On brilliant cars!

Range they in frightful mirth
Without a law—
Or stand they above earth,
In changeless awe!

Are they all desolate,
These silent stars—
Hung in their spheres by fate
Which nothing mars!

Or are they guards of God—
Shining in prayer!
On the same path they've trod
Since light was there!

The following extract from a piece entiled "A Dream of the Sea," displays poetical powers of no common order. The dreamer is supposed to be traversing the bed of ocean, where, while he scans the garnered treasures of that lifeless world, he can hear the everlasting waves above him "go bellowing to their bounds;" and thus he tells his fearful visions:—

Beneath the cloudy waters I could see
Palace and city crumbled—and the ships
Sunk in the engorging whirlpool, while the laugh
Of revel swept the ringing decks—and ere
The oath was strangled in men's swollen throats.
For there they lay—just hurried to one grave,
With horrible contortions and fixed eyes,
Waving among the cannon, as the surge
Did slowly lift them, and their streaming hair
Twining around the blades that were their pride.

And there were two, lock'd in each other's arms;
And they were lovers!—
O God! how beautiful!—laid cheek to cheek,
And heart to heart, upon that splendid deep,
A bridal bed of pearls!—a burial,
Worthy of two so young and innocent!
And they did seem to lie there, like two gems—
The fairest in the halls of ocean—both
Sepulchred in love—a tearless death—one look,
One wish—one smile—one mantle for their shroud—
One hope—one kiss—and that not yet quite cold!
How beautiful to die in such fidelity!
Ere yet the curse has ripen'd—or the heart
Begins to hope for death as for a joy,
And feels its streams grow thicker, till they cloy
With wishes that have sicken'd and grown old!
I saw their cheeks were pure and passionless,
And all their love had past into a smile,
And in that smile they died!—

Sudden a battle roll'd above my head.
And there came down a flash into the deep,
Illuming its dim chambers—and it pass'd.

The waters shudder'd, and a thousand sounds
Sung hellish echoes through the cavern'd waste.
The blast was screaming on the upper wave;
And as I look'd above me, I could see
The ships go booming thro' the murky storm—
Sails rent—mast staggering—and a spectre crew;
Blood mingled with the foam, bathing their bows;
And I could hear their shrieks as they went on,
Crying of murder to their bloody foes!

These two contrasted pictures are certainly very fine, and we are only sorry that our limits prevent our extracting the whole piece, which is equally well sustained throughout. But to do a volume of original poems like that before us justice, we must return to it more than once. And trusting that the few specimens we have shown of Mr. Mellen's powers are still sufficient to stimulate the curiosity of our readers to examine this interesting collection for themselves, we take leave of it for the present, with many thanks to the author for the heartfelt pleasure its perusal has afforded. *

The New Gil Blas, or Pedro of Penaflor, by Henry D. Inglis, author of "Spain in 1830;" 2 vols. Philad., Carey & Son.—This though a very readable book, has, like the previous work by the same author, been much overpraised. It is written in an easy and rather agreeable style, and the *costume* of the country where the scene is laid is, so far as we can judge, well preserved, but the incidents are in the highest degree improbable, and the principal characters too extravagant altogether. The work, as may be gathered from the first part of the title, is a collection of tales strung together like threaded beads upon one main story. In the invention of some of these tales no little ingenuity and cleverness is manifested, but to the most of them taken separately, the remarks we have made above are perfectly applicable, while when they come to be considered together, so defective are they in that natural adhesion and truth to nature which renders the model upon which the book is written one of the most delightful in the world, that comparisons almost fatal to the copy cannot fail to suggest themselves. We had marked one well written sketch to follow here, but are under the necessity of postponing it until another day. *

Wild Sports of the West, by the Author of Stories of Waterloo. *Harpers.* 2 vols.—This is one of the most agreeable light reading books that has been for some time reprinted here. It abounds in vivid sketches of scenery and manners in the west of Ireland, and amid the most animated accounts of every variety of field sports, introduces a melange of ludicrous anecdotes and striking legendary tales. The materiel is good, and it is well put together.—The great charm of the work, after all, however, consists perhaps in the freshness of the subjects which the writer, (who we believe is a clergyman of the Church of England,) deals with. The west of Ireland has only lately become a field trodden by the novellist; and those remote districts, rich in beautiful scenery and abounding in legendary lore, are almost as virgin ground to the tourist and sportsman as when described by Spenser two hundred years ago. "And sure," says the poet, "it is yet a most beautifull and sweet countrey as any is under heaven, being stored throughout with many goodly rivers, replenished with all sorts of fish most abundantly, sprinkled with many very sweet islands and goodly lakes, like little inland seas, that will even carry shippes upon their waters." Such as it appeared to the author of the Faery Queen, before his castle was burnt over his head, and the body of his murdered infant consumed in the blazing ruins, is this beautiful but ill-fated country described in the book before us. Nature there, as elsewhere, has kept her never-failing promise, in the yearly renewal of all her charms; while man, bowed but not broken by centuries of misgovernment and oppression—smarting under a sense of entailed poverty, and stung to vindictiveness by accumulated injury—exhibits too often the same savage character, the same horrid acts, that drove one of England's sweetest poets, himself the gentlest of beings, from his happy home, to mourn in exile over his murdered offspring, and hearth made desolate for ever. Not few are the scenes of violence and bloodshed described in the volumes before us; but among them it is gratifying to find instances like the following, which show the effect of cool and steady courage in repelling a band of midnight ruffians:

'Several years ago, when the south of Ireland was, as it has ever has been within my memory, in a disturbed state, a gentleman advanced in years lived in a retired country house. He was a bachelor, and whether trusting to his supposed popularity, or imagining that the general alarm among the gentry was groundless, he continued in his lonely mansion long after their neighbors had quitted theirs for a safer residence in town. He had been indisposed for several days, and on the night he was attacked, had taken supper in his bedroom, which was on the ground floor, and inside a parlor, with which it communicated. The servants went to bed; the house was shut up for the night; and the supper-tray, with its appurtenances, by a providential oversight, were forgotten in the old man's chamber.

"Some hours after he had retired to bed, he was alarmed at hearing a window lifted in the outer apartment; his chamber-door was ajar, and the moon shone brilliantly through the open casement, rendering objects in the parlor distinct and perceptible to any person in the inner room. Presently a man leaped through the window, and three others followed him in quick succession. The old gentleman sprang from his bed, but unfortunately there were no arms in the apartment; recollecting, however, the forgotten supper-tray, he provided himself with a case-knife, and resolutely took his stand behind the open door. He had one advantage over the murderers, they were in full moonlight, and he shrouded in impenetrable darkness.

"A momentary hesitation took place among the party who seemed undecided as to which of them should first enter the dark room; for, acquainted with the localities of the house, they knew well that there the devoted victim slept. At last one of the villains cautiously approached, stood for a moment in the doorway, hesitated, advanced a step—not a whisper was heard, a breathless silence reigned around, and the apartment before him was dark as the grave itself.—'Go on, blast ye! What the devil are ye *afeerd* of? said the rough voice of an associate behind; he took a second step, and the old man's knife was buried in his heart! No second thrust was requisite, for with a deep groan the robber sunk upon the floor.

"The obscurity of the chamber, the sudden destruction caused by that deadly thrust, prevented the ruffians in the outer room from knowing the fate of their companion. A second presented himself,—crossed the threshold, stumbled against his dead associate, and received the old man's knife in his bosom. The wound, though mortal, was not so fatal as the other, and the ruffian had strength to ejaculate that he was 'a dead man!'

"Instantly, several shots were fired, but the old gentleman's position sheltered him from the bullets. A third assassin advanced, levelled a long fowling-piece through the door-way, and actually rested the barrel against the old man's body. The direction, however, was a slanting one, and with admirable self-possession, he remained steady until the murderer drew the trigger, and the ball passed him without injury; but the flash from the gun unfortunately disclosed the place of his ambush. Then commenced a desperate struggle, the robber, a powerful and athletic ruffian, closed and seized his victim around the body—there was no equality between the combatants with regard to strength; and although the old man struck often and furiously with his knife, the blows were ineffectual, and he was thrown heavily on the floor with the murderer above him. Even then, at that awful moment, his presence of mind saved this heroic gentleman. He found that the blade of the knife had turned, and he contrived to strengthen it upon the floor. The ruffian's hands were already upon his throat—the pressure became suffocating—a few moments more and the contest must have ended; but an accidental movement of his body exposed the murderer's side—the old man struck with his remaining strength a deadly blow—the robber's grasp relaxed—and with a yell of mortal agony, he fell dead across his exhausted opponent!

"Horror-struck by the death-shriek of their comrades, the banditti wanted courage to enter that gloomy chamber which had been already fatal to so many. They poured an irregular volley in, and leaping through the open window, ran off, leaving their lifeless companions behind.

"Lights and assistance came presently, the chamber was a pool of gore, and the old man, nearly in a state of insensibility, was covered with the blood, and encompassed by the breathless bodies of his intended murderers. He recovered, however, to enjoy for years his well-won reputation, and to receive from the Irish viceroy the honor of knighthood, which never was conferred before upon a braver man."

The following is a pitiable contrast to the above gallant story:

"In 181–," said my kinsman, "a gentleman with his family left Dublin, and removed to an extensive farm he had taken in the wild and troublesome barony of ———. There was no dwelling-house procurable for some time, and the strangers took up their residence in a large cabin upon the road-side, about a mile distant from the little town of ——ford.

"It was naturally supposed that, coming to settle in a strange country, this gentleman had brought money and valuables along with him: a gang of robbers infested that lawless neighborhood under the command of the notorious Captain Gallagher, and they marked out the stranger for a prey.

"This new settler had been married but a few months, and his wife was a young and lovely woman. On the third night after their arrival they retired at their customary hour to rest—he slept upon the ground-floor, and the lady and her female attendants occupied some upper chambers.

"It was past midnight; the unsuspecting family buried in deep repose, when Mr. ——— was fearfully awakened by a stone shattering the window and breaking the looking-glass upon the table. He was, unhappily, a nervous, timid man; he was aware that the house was being attacked; a loaded carbine lay within his reach, but he appears to have abandoned all hope or thought of defending himself;—he heard the crashing of the cabin-windows—he heard the appalling sound of women's shrieks—but, trembling and agitated, he had not power to leave his bed.

"Never did a more dastardly gang attack a house than Gallagher's. After every window was driven in, more than half an hour elapsed before one of them would attempt to enter, although no show of resistance had been offered by the inmates of the house. The cowardly villains would occasionally peep through the shattered casement, and instantly withdraw.

"A single blow struck with good effect, one shot from the loaded carbine, would have scattered the scoundrels, and saved the family from plunder and a dreadful insult. But the unhappy man, paralyzed with terror, lay in helpless imbecility upon his bed, and the banditti, satisfied that no resistence would be offered, at last made good an entrance.

"They lighted candles, bound the unfortunate gentleman, left him half dead with terror, and proceeded to ransack the premises. Soon after shrieks from the lady's chamber announced their being there. They drank wine, and broke every place and thing in the expectation of plunder.

"But, unfortunately, they were disappointed; I say *unfortunately*, as, had they found money, it is possible the lady would have been preserved from insult. Maddened by liquor, and disappointed in their expected booty, the helpless women were subjected to savage insult.

"What must have been that wretched man's sufferings, as he listened to the supplications of his beautiful wife for pity?

"After a dreadful visit of three hours, the ruffians left the house. Their apprehension was almost immediate. I was present at the trial, and the testimony of that beautiful woman, who sat on the bench beside the judge, with the evidence of the wretched husband, was melancholy.

"Conviction followed, and I attended at the place of execution."

The Western Lakes of Ireland:

Of the greater western lakes, Conn and Carra belong to Mayo; Corrib to Galway; and Mask lies between both counties. The most northerly, Lough Conn, is about nine miles long by two or three in breadth. Part of its shores are beautifully wooded; and where the lower and upper lakes unite, the channel is crossed by a bridge of one arch, called the Ponton; there the scenery is indeed magnificent.

Lough Carra is smaller than Conn: as a sheet of water nothing can be more beautiful—every thing that the painter delights to fancy may here be realized. Islands and peninsulas, with rich over-hanging woods, a boundless range of mountain masses in the distance, ruins in excellent keeping—all form a splendid study for the artist's pencil.

Mask communicates with Carra, and their united waters discharge themselves into Lough Corrib by a very curious subterraneous channel at Cong. Lough Corrib is largest of all; it stretches twenty miles to its southern extremity al Galway, when, through a bold rocky river, it discharges its waters into the Atlantic. Its breadth is very variable, ranging from two to twelve miles. Besides its singlar connexions with the Mayo lakes by the underground channel at Cong, Lough Corrib produces a rare species of muscle, in which pearls are frequently discovered. Many of them are said to afford beautiful specimens of that valuable gem.

The smaller lakes, which are so profusely scattered over the surface of this county, vary in the species of fish which they respectively produce, as much as they do in their own natural size and character.—Some of them afford trout, others pike only, and many are stocked with both. That this union cannot long subsist, I should be inclined to infer from one remarkable circumstance, and it is a convincing proof of the rapid destruction which the introduction of pike into a trout-lake will occasion. Within a short distance of Castlebar there is a small bog-lake, called Derreens; ten years ago it was celebrated for its numerous and well-sized trouts. Accidentally pike effected a passage into the lough from the Minola River, and now the trouts are extinct, or, at least, none of them are caught or seen. Previous to the intrusion of the pikes, half a dozen trouts would be killed in an evening in Derreens, whose collective weight often amounted to twenty pounds.

Indeed, few of the Mayo waters are secure from the encroachments of the pike. The lakes of Castlebar, I believe, still retain their ancient character; but I understand that pikes have been latterly taken in the Turlough River, and of course they will soon appear in a lake which directly communicates with this stream.

Irish Litigation:

It is asserted, with what truth I cannot pretend to state, that the inhabitants of Inniskea are prone to litigation, and a curious legend of a law-suit is told upon the main, illustrative of this their quarrelsome disposition. A century ago two persons were remarkable here for superior opulence, and had become the envy and wonder of their poorer neighbors. Their wealth consisted of a flock of sheep, when, unfortunately, some trifling dispute occurring between them, a dissolution of partnership was resolved upon. To divide the flock, one would suppose, was not difficult, and they proceeded to partition the property accordingly. They possessed one hundred and one sheep; fifty fell to each proprietor, but the odd one—how was it to be disposed of? Neither would part with his moiety to the other, and after a long and angry negotiation, the sheep was left in common property between them. Although the season had not come round when sheep are usually shorn, one of the proprietors, requiring wool for a pair of stockings, proposed that the fleece should be taken off. This was resisted by his co-partner, and the point was finally settled by shearing one side of the animal. Only a few days after, the sheep was found dead in a deep ditch—one party ascribed the accident to the cold feelings of the animal having urged him to seek a shelter in the fatal trench; while the other contended, that the wool remaining upon one side had caused the wether to lose its equilibrium, and that thus the melancholy catastrophe was occasioned. The parties went to law directly, and the expenses of the suit actually devoured the produce of the entire flock, and reduced both to a state of utter beggary. Their descendants are pointed out to this day as the poorest of the community, and litigants are frequently warned to avoid the fate of "*Malley and Malone.*"

The above extracts, though characteristic of the work, and therefore selected here, give but little idea of the variety of lively anecdote and interesting local sketches to be found in "Wild Sports of the West." Many quotations have long since been made in our columns from the English edition; but to those who wish to study a state of society the most unique in the world, and who have not time to peruse the whole book, we recommend especially the chapter in vol. 2, entitled "Moral condition of the West, Past and Present." *

Contents of the forthcoming No. of the American Quarterly Review.—Art 1. The Life and Writings of Governor Livingston. 2. Windham's life and Speeches. 3. Slavery in the District of Columbia. 4. Poor Laws. 5. Imprisonments of Silvio Pellico. 6. Goodrich's Geography. 7. Felton's Homer. 8. Works of Joanna Baillie. 9. Roscoe's Life and Writings. 10. The Penitentiary System of the U. States.

SUMMARY.

The amount of cash duties the week before last, received at the New York Custom House, on Wool lens. was over $180,000. There were received at our Post Office on Friday, after 3 o'clock, P. M., 5595 ship letters, all of which were mailed in less than 4 hours.

The Washington Globe of Saturday states that the President of the United States returned on the previous day from the Rip Raps—his health and strength much recruited.

Interesting and Painful News.—The editors of the Gazette have before them a letter from a friend, dated

Eastport, Aug. 19.—It states, "I have seen Capt. Tucker, of schooner Leader, just returned from the Magdalene Islands, who informs that Mr. Audubon, a week previous to the 22d of June, had been at an adjoining harbor, where he remained two days.

Capt. Tucker also informs, that this has been a most disastrous season among the fishermen belonging to Newfoundland, about 300 of them having been lost, with their vessels, (about 35,) in fishing for seal among the floating ice in the spring. It is supposed they were all lost in a violent gale in the spring, which destroyed the vessels among the ice."

The Philadelphia United States Gazette of yesterday, gives a noble instance of courage and devotion in a female, under circumstances the most appalling.

Two men were suffocated in a kiln on Monday morning, about half way between Burlington and Moorestown. They were engaged in preparing a kiln for burning lime, in which stone coal and charcoal are used in alternate layers. In the course of the operation, and after the under layers had become ignited, one of the men descended for the purpose of leveling the coal, and was immediately overcome by the suffocating effects of the charcoal. His companion went down to his assistance, and was similarly affected, and both were so completely prostrated, as to be incapable of getting out. In this condition, they were discovered by the wife of one of the men. She immediately descended the kiln, and attempted to secure a rope about her husband, in hopes of being able to pull him out, but soon found herself gasping for breath. She succeeded in reaching the mouth of the kiln, and after recovering herself, descended a second time, but was again compelled to leave her husband, whom she beheld in the agonies of death beneath her. Unable to witness his expiring struggles without endeavoring to save him, the heroic woman made a third descent, and after every exertion, was forced to relinquish her desperate task, and the smothering effects of the charcoal were so distressing, that she was just able to reach the top of the kiln, when she fell from excessive exhaustion and faintness. The two men are dead

Strange Animal.—An animal of strange cognomen has repeatedly been seen in and about the woods at Hadley, (Upper Mills,) exciting no little curiosity in that vicinity. He is represented as larger than a fox, of a brindled colour, long hind legs and short front ones, and belongs to no species known about here. He is rather ferocious, and when seen in the road by two men between the Upper Mills and Sunderland, he growled angrily, and seemed disposed to act on the offensive. No hunters have been able to get a shot at him, but dogs have been vanquished and they refuse to renew the attack again. He is thought to be a species of the Kangaroo, going upon his long hind legs, by skipping and jumping. A general hunt is to be attempted in a few days. If successful, we may learn something more minute about him.—[Northampton Courier.]

Jacksonville, (Ill.) Aug. 10.—On Thursday last a company of Indians passed through Jacksonville. There were seventy, including men, women and children. They belonged to the Shawnee tribe—had sold out their lands in Ohio, and were on their way to Jackson county, Missouri. They looked cheerful and happy, and were all well mounted. The men had their rifles with them, and it was remarked by some, more timid than the rest, that perhaps the Indians had heard that the Cholera was among us, and on account of the few inhabitants in our town, had come, expecting to make of us an easy prey!—[Illinois Patriot.]

A gentleman in South Russel Street, Boston, on examining his well of water on the 12th instant, discovered a box containing several pounds of butter, which had laid in the well eleven years; it was found to be in a good state of preservation.

102 black fish were driven ashore at Provincetown on Saturday morning by the crews of eight boats, and over 100 pounds of oil obtained from them.

[*From the Albany Daily Advertiser of Aug.* 21.]

The Seneca Indians.—The annexed proceedings of a Council of this Nation, residing in the Western part of this State, have been furnished us for publication by the Interpreter:

The chiefs of the Seneca Nation of Indians, have, in Council, determined not to send a deligation to Green Bay, as was proposed to them; and have also determined to have nothing to do with the Green Bay ands. They wish their great father the President, and all the white people to know that Young King, Capt. Pollard, James Stevenson, Seneca White, Henry Two Guns, Capt. Strong, Destroy Town, Job Pierce, and William Patterson, are no longer Chiefs of the Seneca Nation, because they have acted contrary to the customs and practises of our people. The rule of the white people is, that a majority of their Chiefs, pass a law, and our rule is the same. It was for us to determine the question relative to the Green Bay lands; and we did determine to let them alone, and live on the seats we now own. These Chiefs, who are well known to the white people, have tried to make us act contrary to what the Council determined to do, and to violate the act of the Chiefs; and for this we put them down. We are on good terms with the State of New York, and no compulsion or persecution shall drive us from the lands we are seated upon.

Done at the Council on the Buffalo Reservation, this 31st day of July, 1833. Signed

Big Kettle,
Jimmy Johnson,
Little Johnson,
White Seneca,
John Snow,
Green Blanket,
Tall Peter,
Doxtator,
Tommy Jimmy,
Daniel Two Guns,
Jack Berry,
Mark Charles,
Sky Carrier,
John Hudson,
Two Guns,
George Kenjaktadeh,
Jo Hemlock,
Israel Jimeson,
JohnSnow of Cattaraugus,
Capt. Snow,
George Bennett,
Young Chief,
Tunis Halftown,
John Pierce,
Gov. Blacksnake,
James Robinson,
Samuel Gordon,
George Red Eye,
Long John,
Blue Eyes,
Capt. Jones,
Black Chief,
Black Smith,
Blue Sky,
Geo. Washington,
Samuel Parker,
John Look,
Jesse Stickney,
John Na John,
Isaac Davis,
Levi Halftown,
George Deer,
Jack Snow,
John Cook,
John Big Fire,
John Beaver,
John S. Rey,
John General.

Maris B. Pierce, Interpreter.

Aquatics.—The Regatta at Quebec, this season, appears to have excited universal interest, both among Canadians and strangers. The Governor General of Canada himself presided over the sports, and the display, both in rowing and yachting, was very fine, the British officers proving themselves, as usual, capital oarsmen. We should almost despair, in our plodding city, of getting up an affair half so splendid and dashing as that which has lately animated the St. Lawrence; but if the Quebec victors are in earnest in the generous threat held forth in the following paragraph from the Montreal Daily Advertiser, we do not despair of its being yet met in a decent way here. If "The Battery Boat Club" or "The Greenwich Rowing Club" cannot furnish oarsmen, Whitehall can at least supply that deficiency, should one or both of these Clubs get up the Regatta; and as for a boat, the builder of "the American Eagle" can launch as swift a craft as was ever pulled in any water;—so that if Major Jack Downing—(who, our Canadian friends may be aware, is at this moment one of the most distinguished characters in the country)—can only be prevailed upon to preside at the fête, old Hudson may shake his sides with glee at the gallant capers to be cut on his lordly bosom. *

The Regatta.—The *Themes* boat, imported by the officers of the 32d Regiment, has maintained the character of its class. It has beaten the Greenock built boat hollow, though the latter was rowed by an excellent crew. It is understood the officers of the 32d Regiment intend to go to New York to try the Whitehall men; and as they have beaten a boat which beat the *American Eagle*, it is very doubtful whether New York can furnish a boat and crew to equal the *Themes* and its rowers.

BLACK HAWK AND HIS PARTY AT HOME.

We have been favored with the following letter from an intelligent correspondent, dated

FORT ARMSTRONG, Upper Mississippi,
August 5th, 1833.

The whole suite arrived here a few days since, loaded with assumed dignity and costly presents.

Keokuck's band speedily followed to welcome their brothers; a grand council assembled, among whom was myself, to witness the deliverance of the Hawk to his nation. The council opened with the address of the President to Black Hawk, in which he is informed that in future he was to yield supremacy to his inferior, Keokuck, the white man's friend.

The old chief rose, in violent agitation, denied that the President had told him so, and said that he would not be advised by any body; that he wanted what he said to be told to the President, and that he in person would have said so in Washington, but that his interpreter could not sufficiently make known his views. The colonel made to him a speech, stating that by his own treaty neither he nor his people could for the future head a band; and that by that treaty Keokuck was placed head of the Sac nation, &c.—Keokuck spoke awhile to the Hawk, then addressed the council, begged nothing might be remembered of what the Hawk said; that he was too old to say any thing good, and that he was answerable for his good behaviour. The poor old chief recalled his words, and I do not know that my sympathies were ever more excited than in witnessing his expiring struggle for freedom. Nothing but his advanced age, and want of military power will prevent him from making another effort. In the sequel, Keokuck's band gave us a splendid dance; but the Hawk's party were either too dejected or too sullen to participate in the festivities.

You may tell the good citizens of New York, these Indians would willingly get up another war in order to make another visit to the East and return loaded with presents and almost satiated with attention.—[Dai. Adv.]

FOREIGN INTELLIGENCE.

LATER FROM FRANCE DIRECT.—By the Charlemagne, which sailed from Havre on the 2d instant, we have Paris papers to and of the 1st. The only material intelligence is, that the anniversary of the Three Days passed off without troubles. The decision officially announced in the *Moniteur*, that the forts around Paris should not be proceeded with, without the sanction of the Chamber of Deputies, was struck off in a separate shape, and assiduously distributed among the National Guards, so as to check the cry they were expected to indulge in at the review, of "Down with the forts!"

As for the prospect of a war in Europe, it has been stated by Lord Palmerston in the House of Commons, that it is the manifest necessity of England to remain in a state of peace at every cost, except that of national honor, and that there is no prospect of war so long as France and England shall continue in alliance.

BRUSSELS, JULY 29—Letters from the Hague confirm the reports that Holland demands an augmentation of our portion of the debt, and that it shall be carried to the amount of 12,000,000 francs of the interest; also that the capital should be invested; and finally an increase of the Intus for passing the Scheldt. It appears that the Treaty of Peace is to be negotiated first between Holland and the Five Powers, who will afterwards submit the terms to the approbation of Belgium.

The Jewish civil disabilities bill was passed by the House of Commons on the 22d July, by a vote of 189 to 52. In the course of the discussion, and in answer to an objection, that the Jews looked to Palestine as their country, and acknowledged no other, considering themselves always as a separate and distinct people—Mr. Buckingham said, that having heard the argument repeatedly urged, that the Jews never became attached to any country, because they always expected to be restored to Jerusalem, he was anxious to inform the House of the result of his own observations on this point. He had been in Jerusalem, but he never heard of an English Jew having visited Palestine, even for the purpose of recreation; and the Jews residing there were subjected to so much ill-treatment, that it was their practice, as soon as they realized some little means, to escape from the country as fast as they could. (Hear, and laughter.)

Mr. Wilberforce, the friend of the black man, died on the 28th July.

LONDON, July 23d.—It was confidently stated in the City this morning that a treaty of alliance has been entered into between Lord Palmerston and the Duke de Broglie to recognize Queen Donna Maria immediately the constitutional troops take possession of Lisbon, and that the Ambassadors of her Majesty will be received officially by both Governments.

Donna Maria is expected in London from Paris in the course of this week on her way to Portugal.

Two opulent bankers of Paris and London have contracted a loan to a considerable amount, part of which will be directly forwarded to Oporto to pay up the arrears of pay due to the troops and sailors.

Marshal Bourmont had made an attack upon Oporto, and had been repulsed.

CONSTANTINOPLE, AUG. 10.—The Egyptian army having effected its retreat behind the Taurus, the Russian auxiliary forces have this morning left the roadstead of Bujukdere, to return to the Black Sea. The English squadron under Admiral Malcolm, which had appeared near the Dardanelles, left that station on the 2d inst. and sailed in the direction of Samos.

Dr. Schulz, who had been condemned to 16 years imprisonment by the Tribunal of the Isar, in Bavaria, for having distributed seditious writings, tending to the overthrow of the Government, has been acquitted by the Supreme Tribunal of Appeal, and set at liberty.

In the Federal Diet of Switzerland, July 8th, a resolution was passed, giving full powers to the Vorort, to continue his negotiations with the French Government for a return of the Poles into France.

The official journal of St. Petersburgh contains the creation of a Russian Consulate at Havre, for that and the neighboring ports, and the appointment of M. Charles Stoffregen as Consul.

A Dutch Envoy was in Paris, for the purpose of demanding prior to a renewal of the negociations at London, the restoration of the arms delivered by the prisoners of the citadel of Antwerp, in virtue of the capitulation. Government continued to hold out up to the latest dates, but it was supposed the arms would eventually be surrendered.

Turkey.—The Augsburgh Gazette contains the following, dated frontiers of Servia, June 10th:—"The 6th of June was a happy day for Servia. On that day Prince Milosh announced to his people the resolution of the Porte to cede to the Servians the six districts which were taken from them in 1813. This news was communicated officially to all the Servian authorities, and excited the greatest demonstrations of joy among the inhabitants. Now there remains nothing for the Servians to wish for, but that the Turks who are still residing in Servia may evacuate the country Prince Milosh is negotiating to effect this, and it is expected that his efforts will soon have the desired result."

The product of indirect taxes in France for the first half-year of 1833, was 278,905,000 francs, being an increase of 10,975,000 upon the products of the same taxes in the first half of 1832.

It appears from the official accounts, that in the first six months of the present year, 630 vessels (French and foreign) entered, and 409 French vessels left the ports of France. Vessels merely sailing to or from ports in Europe are not included in these numbers.

PARIS, JULY 15th.—A few days ago a fire broke out at Corbie, near Amiens, which raged with such violence that, in an almost incredibly short period of time, no less than 55 habitations were consumed. Forty families are reduced to positive beggary.

All the arrangements for a daily mail between Paris and London had been completed, but they would not go into operation till the first of January 1834.

It is said that the King of Prussia, notwithstanding his promises, will not send a Charge d'Affaires to the King of Belgium.

Bill for the Abolition of Negro Slavery.—This bill provides, that from the first of November the slaves shall work ten hours a-day for six days in the week, and shall not be flogged or suffer corporeal punishment unless upon conviction before a Court of Justice, or a Magistrate:—That from the 1st of August, 1834, the system of apprenticeship shall commence; it shall be compulsory upon the slaves to be registered apprentices; the previous obligation of the master to maintain slaves in old age and illness to continue:—That at the expiration of eleven years from the 1st of Aug. 1834, all the slaves shall be entirely emancipated:—That the artisan and domestic slaves are to be entirely emancipated from their apprenticeship at the end of six years, whilst the sugar plantation slaves will have to continue their servitude to the end of the eleven years. The daily labour required from all, during their apprenticeships, will be the same—seven and a half hours each day:—That no portion of the Compensation fund shall be paid to the owners of slaves until satisfactory provision has been made to each colony for giving effect to the Act:—That the fund shall be apportioned into 16 shares, which are to be respectively assigned to the 16 different slave colonies, having regard to the number and sale price of slaves in each. The number of slaves in each is to be multiplied by the pounds sterling of their value, and the funds to be divided accordingly.

The workmen at Lyons had struck for higher wages, but their employers were firm in resisting their demands. Several large assemblages of operatives had taken place, but the public peace had not been disturbed.

A letter from Naples, dated the 30th ult., says: "The Count Hector de Lucchesi Palli has just arrived here, and is about to join the Duchess of Berry at Palermo. He has not yet obtained an audience of the King."

A conflict took place on the 12th, at Coote-hill, Irelnnd, between a party of Orangemen, and their oppenents, in which four of the latter were killed; and a number on both sides wounded.

BRUSSELS, Wednesday Afternoon, July 24.

Long after the despatch of yesterday's courier the answer given at Laecken, and at the Palace of Brussels, to inquiries after the health of the Queen, was such as to make the announcement of this morning, however welcome and agreeable, a matter of surprise. The first intimation to the inhabitants of Brussels generally of her Majesty's accouchement was communicated at 6 o'clock by the guns on the Boulevards, with such an emphasis as to awaken the attention of the drowsiest inhabitant of the capital. So sudden and unexpected was the event, that the public functionaries who had been summoned to be present on the occasion, arrived one by one after all was over. Even the King was asleep at 4 o'clock, and at half-past 4 he was assured of his Queen's safety, and of the birth of a son,—a Prince, and heir to his honours and his throne. It had previously been arranged that a salvo of 21 guns should indicate the birth of a Princess, and 101 if a son and heir should be born. The gunners entrusted with firing the salute were observed to make a considerable pause after the 21st gun, for the purpose, no doubt, of piquing the curiosity of many an attentive listener, and making what was to follow more expressive; thus imparting to those mouths of fire, as they are called by the French, a figure of oratory which seems to have all the merit of originality.

The Queen of the French and the two Princesses, her daughters, are to remain here until after the baptism, which is to take place in Brussels on the 1st or 2d of Aug. The King of the French, as gudfather, is to be represented by his second son, the Duke de Nemours; and in deference to the religious feelings of the people, if not to the rules of the Catholic Church, the Queen of the French is to officiate in person as godmother, instead of a proxy of her Royal Highness the Duchess of Kent, as had previously been announced.

The names to be bestowed on the infant Prince are Leopold Louis-Philippe Victor Ernest, after his father and grandfather, his cousin, the princess Royal of England, and his uncle, the reigning Duke of Saxe Cobourg.

The church bells of Brussels have been diligently proclaiming the event ever since six o'clock in the morning; preperations are every where making for a general illumination in the evening; and from the whole aspect of the town it appears that the entire population young and old, had resolved on a holiday extraordinary.

The Prince is to be created Duke of Brabant, and will be christened in the Catholic faith by the Archbishop of Malines.

[From the London Court Journal.]

MEMOIRS OF A DIPLOMATIST.

A Fragment from an Unpublished Work.

Madame De Stael.—On entering the theatre on the following evening and on casting around me a glance of curiosity on the rows of boxes graced by all the beauty and fashion of Stockholm, I perceived a lady whose costume, physiognomy, and whole external appearance struck me as very extraordinary. Picture to yourself a clumsy figure—broad shoulders—nothing delicate or graceful—bold features, cheeks inflamed with rouge—a dress of the most glaring color—eyes sparkling with wit and vivacity—but every look of which might be taken for a provocation—black hair, regularly *frisés* by force of art, and loaded with jewels. An enormous garland of variegated flowers encircled her head, surmounted by a plume of drooping feathers. Represent to yourself, by the side of this person, a young creature, tall and graceful, with a mild expression of countenance, dressed entirely in white, and whose golden hair fell in natural curls down her back, her only ornament her native simplicity and innocence, and you will form a perfect idea of the striking contrast between mother and daughter. We Swedes are so accustomed to the modesty of our own women, that the attitude of Madame de Staël appeared to us most singular. She had taken off her gloves—her body, half out of the box—animated by the most exalted enthusiasm, she gave with her hands, which were of the most dazzling whiteness and the most perfect shape, the signal of applause, at every marked passage. I observed her attentively, and her enthusiasm was not assumed; still her eyes were not irradiated with that pure exaltation which, under similar circumstances, I have seen in the intuitive looks of a German woman, whose aspect alone electrified me and elevated my mind.

At a subsequent period, I repeatedly heard Madame de Staël read, speak, and declaim; but in all that she said and did, I felt that she never forgot herself, and that she calculated beforehand the effect she was to produce. I was introduced to her the next day, and from that period I was in the habit of seeing her almost daily. Her deportment did not correspond with our Swedish ideas of propriety: she had a very pretty foot, but she was not satisfied with shewing it alone, but exhibited, likewise a well proportioned leg, with an '*abandon*' that elicited many a joke at her expense.

Accustomed in France to warm herself at the chimney fire, she did not relinquish this favorite habit before our stoves, the doors of which are not very low, and it appeared to us to form an occasion for showing her foot. I was several times invited to meet her at dinner at the Prince Royal's. The play of her hands and arms seemed to me to be quite studied. She would sometimes lean both her elbows on the table, and declaim and gesticulate with so much fire, that her neighbors were obliged to be upon their guard. Her conversation sparkled with wit, but nevertheless became monotonous, because the greater part of the time she would speak alone, and the most frivolous topic became the subject of a profound dissertation. There was but one opinion throughout our *salons*, on the vast powers of her mind; but, at the same time, there was not one of us who would have wished to have such a mother, wife, or sister, as she. We looked upon her with astonishment; we admired her as a wonder, as a rare and unequalled phenomenon in the female world. Her vanity, however, received several severe checks at Stockholm. Our friend L——, for instance, obstinately refused to call on her, in spite of her reiterated and pressing invitations. 'I do not speak French well enough to maintain an argument in that language,' he replied; 'Madame de Staël is not content with a simple conversation.' Baron de Bejerstrole acted much in the same manner. 'This woman,' said he, 'has probably come here to write a Swedish Maia, as a *pendant* to her Italian Corinna; and I have no idea of going to sit for my picture.'

Madame de Staël read, at several of the Queen's *soirées*, some fragments of her then unpublished work on Germany. On one occasion she interrupted herself in the middle of a passage, and said to the Queen, '*Madame, veut elle bien me dire ce que c'est qu'une tragedie?*' You may imagine her Majesty's embarrassment, on being called on for the first time in her life, to give such a definition. Madame de Staël maliciously enjoyed for some minutes the perplexity of the good old Queen; and then turning towards us, she discoursed so eloquently and profoundly on the nature and power of tragedy, and declaimed to us several celebrated scenes from the French tragic poets, with such impassioned energy, that I could have gone down on my knees before her. Still, had she at that moment have put to me the question she formerly did to M. de Talleyrand, I should have answered her like that great diplomatist, '*Ah, Madame on m'a assuré que vous sabiez nager.*'

What especially pleased me in Madame de Stael was her sound practical sense, and all the auxiliary means she brought into play to ensure the success of her plans. She solicited the rank of Major, for her youngest son, and was extremely offended because the Prince Royal gave him only a Lieutenant's commission. He was killed, a year afterwards, in a duel with a Russian officer. The parties quarrelled at the Baths of Doberan, while playing at faro.—Young de Stael's death was preceded by a singular incident, and which may be cited as another example by those who believe in presentiments. The English Admiral, Moore, who had cast anchor in a neighboring port, came up to Doberan to pay his respects to the Grand Duke of Mecklenburg Schwerin. De Stael called upon him. The Admiral, who was intimately acquainted with Madame de Stael, advanced to receive him with warmth. Several persons present, however, observed that he started back with affright when De Stael held out his hand to him, and that he remained silent and melancholy while the interview lasted. One of my friends asked him the cause of his reserve:—'The sight of that young man,' said the Admiral, 'deeply affected me: he will meet a violent death, and that, too, very soon!' Eight days afterwards, young de Stael was no longer in existence!

Madame de Staël's eldest son wished to be attached to the Swedish Legation proceeding to the United States. There were some difficulties in the way, and the King, to whom his mother directly applied, flatly refused her: but she, nevertheless, succeeded, with an address that astonished our oldest courtiers. Augustus William Schlégel also obtained an appointment in the Swedish service. Rocca, who passed generally for Madame de Staël's lover, was the only one for whom she solicited nothing. He was beautiful as a Grecian statue, but in other respects insignificant. He, however, appeared passionately fond of this celebrated woman; and her soul of fire, perhaps, experienced an indescribable felicity at feeling herself beloved in the autumn of her days with all the passion of youth.

In spite of these slight shades, Madame de Staël was one of the most grandiose and wonderful apparitions of her age. She gave, at Stockholm, multiplied proofs of her liberality, and of the nobleness of her mind; and relieved the poor relations of her deceased husband with a delicacy that enhanced the price of her favors.

The Black Death.—This book, with such a fearful title, is translated from the German of the celebrated Hecker, by Dr. Babington, and gives an account of the ravages of that fearful pestilence which raged in Italy and throughout Europe, in the time of Boccacio. A more interesting work we have never met with.

In many places, it was rumored that plague patients were buried alive, as may sometimes happen through senseless alarm and indecent haste; and thus the horror of the distressed people was every where increased. In Erfurt, after the church-yards were filled, 12,000 corpses were thrown into eleven great pits; and the like might, more or less exactly, be stated with respect to all the larger cities. Funeral ceremonies, the last consolation of the survivors, were every where impracticable.

In all Germany, according to a probable calculation, there seem to have died only 1,244,434 inhabitants; this country, however, was more spared than others: Italy, on the contrary, was most severely visited. It is said to have lost half its inhabitants; and this account is rendered credible from the immense losses of individual cities and provinces: for in Sardinia and Corsica according to the account of the distinguished Florentine, John Villani, who was himself caried off by the black Plague, scarcely a third part of the population remained alive; and it is related of the Venetians, that they engaged ships at a high rate to retreat to the islands; so that after the plague had carried off three fourths of her inhabitants, that proud city was left forlorn and desolate.—In Padua, after the cessation of the plague, two thirds of the inhabitants were wanting; and in Florence it was prohibited to publish the numbers of the dead, and to toll the bells at their funerals, in order that the living might no abandon themselves to despair.

We have more exact accounts of England; most of the great cities suffered incredible losses; above all, Yarmouth, in which 7052 died; Bristol, Oxford, Norwich, Leicester, York, and London, where, in one burial ground alone, there were interred upwards of 50,000 corpses, arranged in layers, in large pits. It is said, that in the whole country, scarcely a tenth part remained alive; but this estimate is evidently too high. Smaller losses were sufficient to cause those convulsions, whose consequences were felt for some centuries, in a false impulse given to civil life, and whose indirect influence, unknown to the English, has, perhaps, extended even to modern times.

The changes which occurred about this period in the north of Europe, are sufficiently memorable to claim a few moments attention. In Sweden, two princes died—Haken and Kaut, half brothers of King Magnus; and in Westgothland alone, 466 priests.—The inhabitants of Iceland and Greenland found in the coldness of their inhospitable climate, no protection against the southern enemy who had penetrated to them from happier countries. The plague caused great havoc among them. Nature made no allowance for their constant warfare with the elements, and the parsimony with which she had meted out to them the enjoyments of life. In Denmark and Norway, however, people were so occupied with their own misery, that the accustomed voyages to Greenland ceased. Towering ice-bergs formed at the same time on the coast of Greenland, in consequence of the general concussion of the earth's organism; and no mortal, from that time forward, has ever seen that shore or its inhabitants.

It may be observed, that in Russia, the Black Plague did not break out until the year 1361, after it had already passed through the south and north of Europe. In this country also, the mortality was extraordinarily great; and the same scenes of affliction and despair were exhibited as had occurred in those nations which had already passed the ordeal. The same mode of burial—the same horrible certainty of death—the same torpor and depression of spirits. The wealthy abandoned their treasures, and gave their villages and estates to the churches and monasteries; this being, according to the notions of the age, the surest way of sucuring the favor of Heaven, and the forgiveness of past sins. In Russia, too, the voice of nature was silenced by fear and horror. In the hour of danger, fathers, and mothers deserted their children, and children their parents.

Of all the estimates of the number of lives lost in Europe, the most probable is, that altogether, a fourth-part of the inhabitants were carried off.—Now, if Europe, at present contain 210,000,000 inhabitants, the population, not to take a higher estimate, which might easily be justified, amounted to at least 105,000,000 in the sixth century.

It may, therefore, be assumed, without exaggeration, that Europe lost during the Black Death—25,000,000 of inhabitants.

Marriage of Catholic Priests.—The question of the right of Catholic priests to contract matrimonial engagements in France is about to be tried in a way which will probably set it to rest. M. Leloup, a priest of the newly established "French Catholic Church," has made application to the Mayor of his arrondissement that his bans of marriage may be published in the usual way. The Mayor has required time to consider the application, and take legal advice. As it has been already settled in France that the marriage of a priest is valid, because there is no law in the civil code that forbids it, the Mayor will probably do as he has been requested by M. Leloup, and the marriage may take place. But should the Mayor refuse to publish the bans, M. Leloup intends in that case to bring the matter before a court of law. It is to be remarked, however, that M. Leloup, though a Roman Catholic priest, originally ordained in the usual way, now belongs to the new sect which do not acknowledge the laws of the Romish Church. But the effect, in the course of a few years, will be to convert the greater part of the Catholic priests and Catholic Christians in France to the faith adopted by the new sect, whose followers have been greatly increasing in numbers for some time past. This "French Catholic" religion will become the religion of the country, and the small remnant of the Pope's authority which exists at present, will be made to disappear as completely as the progress of the reformation has made it disappear in Great Britain. Religion has suffered in France on account of its close connexion with the Church of Rome and with the Jesuits, and because the rulers of the country had always contrived to make it an instrument for the better subjection of the people; but now that they see a church established among them for no other object than the promotion of religion itself, and entirely free from political connexion, the French people appear disposed to rally round that church and make it prosper.—[Letter from Paris.]

Progress of Civilization in Algiers.—The influence of the Turks has long been declining in Algiers. But there are few Moorish families not connected in marriage with the public functionaries sent thither from time to time from Constantinople. Their descendants are denominated Coulouglis, and have always enjoyed particular priveleges. The families connected with them have been enriched, but the source of wealth, which consisted in piracies upon the coast of Spain and Italy, has been stopped during many years; and Lord Exmouth put an end to Christian slavery in 1816, while various treaties with Europe decidedly checked the former irregular warfare and weakened the Turks. In this state of things we found the Moors ready to receive us as liberators. Our manners and refined habits were more pleasing to them than those of the Turkish soldiery. They have not forgotten Spain and its enchantments. Their countenances and gestures, and their whole domeanour, are strikingly Spanish. One of them, Sidi Bou Dharba, told me one day, that by his mother's side he was descended from the Moors of Granada. I have often played at whist, or écarté, with these pretended barbarians, and found myself in enlightened discussion upon the comparative merits of European and Moslem manners. Their dwellings are fitted up with great luxury. At the country house of Sidi Hamedan, whose eldest son was educated at Paris, are to be seen all the resources of a man of taste, a library, and a garden laid out in the English style.—Polygamy is almost unknown at Algiers. The women have much more freedom than in other Mohammedan countries. They have the exclusive management of the house, and pay much attention to the education of their children. The Algerines are fond of music, and offered to contribute towards the expense of a theatre. Many of them speak French, Italian, Spanish, and English. And what seems decisive as to the civilization of the Moors, they possess a great number of schools conducted upon the Lancaster and Bell systems of mutual instruction; and primary instruction is more general than in France. It is a great error to suppose them hostile to our more enlightened views.—[Westminister Review.]

Italian Fig-Tree.—Among the time-worn ruins of the ancient castle at Reculver, in the island of Thanet, which forms part of the county of Kent, an ancient fig-tree stretches forth its venerable arms to the breeze, and attracts the attention of the visiter, not more by the venerable aspect it presents, than by the historical records with which it is connected.—This tree, according to the traditions of the neighborhood, claims Italy for the soil of its nativity, and Roman hands for those of its first planters; its age, consequently, cannot be less than from 1345 to 1888 years, the Romans having first landed at Deal in the summer of the 55th year before the birth of our Saviour, 1888 years ago, and finally quitted Britain in the year of our Lord 488, 1345 years ago. Could this patriarchal tree but relate the various changes it has seen, and the political, as well as physical, convulsions it has experienced, what an eventful history it could furnish!

Parisian Manufactures.—One of the most positive signs of the present improving state of France is the amount of the duties of manufactured articles in gold and silver. This manufacture is almost exclusively confined to Paris, and of all articles of luxury these are always the first to feel the effect of any political or commercial crisis, and the last to revive with the return of peace and prosperity. The following is a statement of the produce of those duties during the last three years:—1830—First six months, 529,040f; second six months, 304,935f. 1831—First six months, 258,439f.; second six months, 368,798f.—1832—First six months, 330,721f; second six months, 454,980f. The first six months of the present year have produced 490,854f. Thus it appears that the manufacture was less in the first half year of 1831 than immediately after the days of July; and, on account of the repeated disturbances, did not begin to revive until the measures of the Government had restored the country to security and confidence. Relaxed again by the Cholera and the events of June in last year, it resumed fresh vigor in the second half of the year, and during the last six months has reached a point almost equal to the maximum for many years. Such facts as these are the best answer to those who deny that industry and commerce have improved.—[Journal de Paris.]

Turkish Soldiers.—The first sound that now strikes a stranger on entering the city is that of a fine military band, and the first sight is a regular regiment marching through the streets. If he goes in the morning or evening to a public parade, he will see soldiers drawn out in line, regularly exercised and hear excellent music, to which groups of well dressed people are listening while they walk up and down. 'Tis true there are many things in this approximation to European usage which still remind him that he is not at the Horse Guards or the Castle-yard. The soldiers appear to have no shirts; they are not yet reconciled to the restraint of a stiff black stock, and the shoes which they have taken in exchange for slippers are not in the neatest order; the greatest number are down at the heels as if they were still slippers, and they are all dirty as if they had never been cleaned. Every man gets brushes for the purpose, but they have not yet been reconciled to them. Some orthodox on-bachi suggested that they were made of *hog's bristles*, and they thought the hair of this unclean animal would only defile them still more.—[Dublin University Magazine.]

Manner of naming Countries.—The origin of the word Canada is curious enough. The Spaniards visited that Country previous to the French, and made particular searches for gold and silver, and, finding none, they often said among themselves, "aca nada" (there is nothing here). The Indians, who watched them closely, learnt this sentence and its meaning. After the departure of the Spaniards the French arrived, and the Indians, who wanted none of their company, and supposed they also were Spaniards, come on the same errand, were anxious to inform them that their labour was lost by tarrying in that country, and incessantly repeated to them the Spanish sentence "aca nada." The French, who knew as little of the Spanish as the Indians, supposed this incessantly-recurring sound was the name of the country, and gave it the name of Canada, which it has borne ever since.

Drum Ecclesiastic.—"Ah, Sir!" exclaimed an elder, in a tone of pathetic recollection, "our late ministet was the man! He was a *powerful* preasher, for i' the short time he delivered the word amang us, he knocked three pulpits to pieces, and dung the inside out o' five bibles!"

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols with 100 plates, containing also the economical properties of 100 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

☞ **GRACIE, PRIME & CO.** offer for sale, at 26 Broad street—

2 cases Gum Arabic
20 do. Danish Smalts, EFFF
10 do. Saxon do. do. } Reduced Duty
100 bags Saltpetre
2 do Gall Nuts; 20 tons Old Lead
100 do. Trieste Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do, each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do. Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourton Cloves
30 do. Molieres Almonds
148 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
15 do. 6-3 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Sattcens
4 do. White Quiltings
10 do. Borrle's Patent Thread, No. 22 and 25
10 do Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
23 bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35 24½x36, 24x24½, 23x36, 26x37, 29x41, 27x32½ 24x33, 24x29, 24x28 21x26, 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices, to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.

5 cases each 1600 Sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
2 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do do do Red do Gold do
2 do do do White do Silver do. A8

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

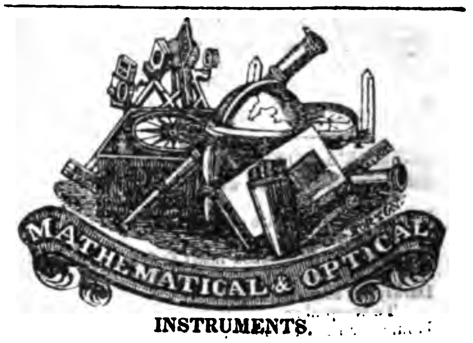
☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co, Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F31 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Rail road Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

POETRY.

[*For the American Railroad Journal.*]

TO THE GOVERNESS OF ———

When lowing herds have reached their home,
And clarion ceased to crow,
And faintly doth the silver moon
Her wonted light bestow,—
Then, fairest, rove with me.

When clearly doth the evening star
Delight each wandering eye,
And here, and on the waters far,
Smiles peace and jollity,—
Then, lovliest, rove with me.

When even the watch-dog, honest like,
Breathes loudly his distress,
And only some small fly disturbs
The universal rest,—
Then, dearest, rove with me.

When all the lights of earth are dark,
The lights of heaven all gay,
And thy soft whisper may be heard,
More than thy voice by day,—
Then, sweetest, rove with me.

I'll tell thee—O! that I could tell
What my heart prompts me to!
But thou wilt read it in my look—
How plain, and ah! how true.
O, thou wilt rove with me!
S.

New-London, 19th August, 1833.

SUMMER'S GONE.—*By Mrs. Norton.*

Hark, through the dim woods dying,
With a moan,
Faintly the winds are sighing—
Summer's gone!
There when my bruised heart feeleth,
And the pale moon her face revealeth,
Darkly my footstep stealeth
To weep alone.
Hour after hour I wander,
By men unseen—
And sadly my wrung thoughts ponder,
On what *hath* been,
Summer's gone!

There in our own green bowers
Long ago,
Our path through the tangled flowers
Threading slow;
Oft hand in hand entwining—
Oft side by side reclining—
We've watched in its crimson shining
The sunset glow.
Dimly the sun now burneth
For me alone—
Spring after spring returneth,
Thou art gone,
Summer's gone!

Still on my warm cheek playeth
The restless breeze:
Still in its freshness strayeth
Between the trees.
Still the blue streamlet gusheth—
Still the broad river rusheth—
Still the calm silence husheth
The heart's disease:
But who shall bring our meetings
Back again?
What shall recall *thy* greetings—
Loved in vain!
Summer's gone!

MARRIAGES.

On Thursday evening, 22d inst. by the Rev. Mr. Griffin, Mr. John Walker, to Miss Amelia Oldershaw, daughter of J. H. Oldershaw, all of this city.

On Monday, 5th inst. by the Rev. Dr. Phillips, Geo. H. Kelsey, of Charleston, S. C., to Charlotte H., youngest daughter of the late Genl. Nathaniel Coles, of Dosoris, L. I.

At Jamaica, L. I. on Thursday, Aug. 22, by the Rev. *Wm. L. Johnson*, Henry Van Rensselaer, of Albany, to Elizabeth Ray, daughter of John A. King, Esq.

At Montgomery, Orange Co., on Saturday evening, 10th inst., by the Rev. Mr. Blain, Mr. William D. Hart, to Miss Sarah Ann Bull, both of that village.

At Delhi, on the 15th inst. by the Rev. Orange Clark, Henry L. Robinson, son of the Hon. Tracy Robinson, of Broome co., to Elizabeth, daugher of General Erastus Root.

At New-Haven, on Wednesday the 14th inst. by Silas Mix. Esq. Col. George Ward, of the city of New-York, to Mrs. Charlotte Tuttle, of the former place.

At Elizabethtown, N. J. on Friday evening last, by the Rev. Wm. A. Wilmer, John W. Hoyt, to Olivia Griffith.

DEATHS.

On Thursday morning, the 22d instant, Mr. John Aikman, in the 75th year of his age.

Tuesday, 27th inst., Mrs. Elizabeth, wife of Mr. A. H. Kimmel, and daughter of Mr. Henry Valentine.

On the morning of the 26th instant, Mary Mooney, wife of Walter Mooney, in the 22d year of her age.

At Jamaica, L. I. on Saturday evening, Egbert Benson, aged 87 years.

At his residence, Staten Island, on Sunday, August 25th, Daniel Crocheron, Esq. after a lingering illness.

At Pompton, N. J. on Tuesday, 20th instant, Sarah Catherine, daughter of James Wheeler, Esq. of Warwick, Orange county, N. Y.

At Bridgeport, Ct. on the 17th inst. Mr. Asa Benjamin, in the 70th year of his age. He was one of the remaining few, who, during our revolutionary struggle, stepped forth in defence of our country and the great cause of liberty. Since that period he has resided in his native state, where the excellence of his heart, his strict integrity, his blandness and affability of manners, and his kindness to his fellow men, gained their universal respect and esteem. He will long be affectionately remembered by his relatives and numerous friends.

On the 30th July, Mrs. Maria Elizabeth Pierce, consort of Jeremiah L. Pierce, of Cincinnati.

At Nashville, Tenn. on the morning of Tuesday, 13th August, William Gibbes Hunt, Esq. Editor of the National Banner, a native of Boston, aged 42 years and 6 months.

At Jacksonville, Illinois, the 9th instant, Dr. Aldis S. Allen, of Bridgeport, (Conn.) he with his wife on their return home, from a tour through the Wstern States, where he was taken sick and died of billious fever.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map of that section of the United States *north of the Potomac and east of Lake Erie*, upon which will be delineated all the RAILROADS now chartered, and in contemplation, as far as can be ascertained. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR.

New-York, August 14, 1833.

G. LANSING, *Engraver on Wood,*
35 WALL STREET.

☞ All kinds of Machinery correctly drawn, and neatly engraved. m4

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.

August 15, 1833. A29 tf R J. M M & F

AMERICAN INSTITUTE.

☞ THE Sixth Annual Fair of the American Institute will be held in the city of New-York, at Masonic Hall, on Tuesday the 15th of October next, and continue three days.

Premiums, consisting of Diplomas, or Medals, will be awarded, as usual, for such articles of American production, as shall be adjudged superior, either in material or workmanship.

As a new impetus seems to have been lately given to American Industry, it is confidently expected that the Fair announced for October next, will present still more decisive evidence of the advancing condition of our agriculture, our manufactures, and the arts, than any of those which have preceded it.

Such ingenious and useful machinery as may be conveniently transported, and put in operation, will give interest and spirit to the occasion.

Each article should be labelled with the name of the manufacturer, or producer, and with the agent's name, and number, in this city.

The design is to inform buyers where they can supply themselves with the best articles. In this way, by means of former Fairs, many excellent workmen have become better known and have obtained permanent and profitable customers, who, while they have been better served, have at the same time rewarded and stimulated American skill and industry.

Articles entered for premiums must be delivered as early as Monday, the 14th of October.

More particular notices will be published previous to the Fair. For any other information which may be desired, apply to either of the Managers, in person or by letter.

JAMES LYNCH,
ANDREW WILLIAMS,
EDWARD T. BACKHOUSE,
CLARKSON CROLIUS, Jr.
WM. F. PHYFE,
JOHN SAMPSON,
JOSEPH TITCOMB,
JARED L. MOORE,
GEORGE BACON,
} Managers.

New-York, July 4th. 1833. A29 t13 oct R J

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1½ do. ⅜ do.
800 do. 2 do. ½ do.
800 do. 2¼ do. ½ do.
soon expected.
} *Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. a3 4meowr

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

⁎ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.

J25 tf

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

J8 ROGERS, KETCHUM & GROSVENOR.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

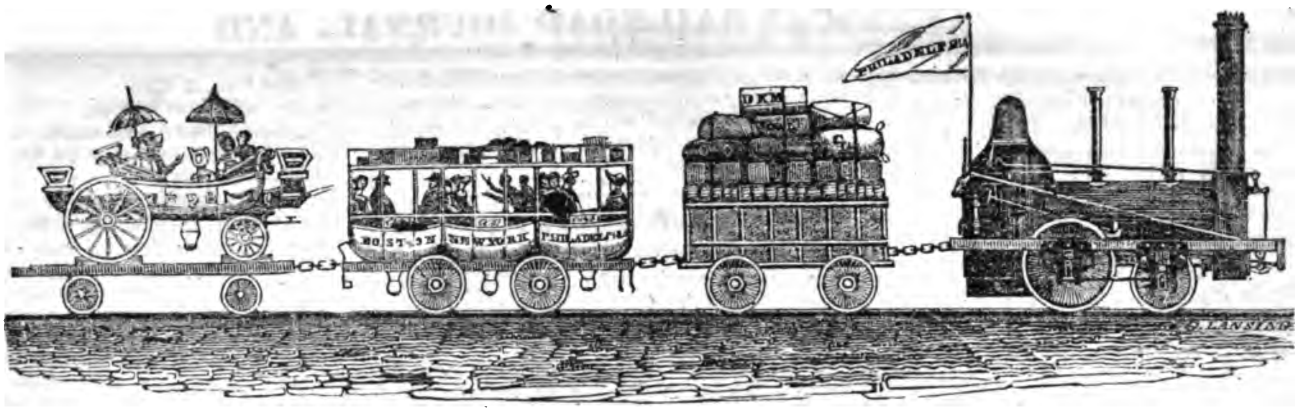
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, SEPTEMBER 7, 1833. [VOLUME II.—No. 36.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, SEPTEMBER 7, 1833.

Tonnewanda Railroad.—We refered in a previous number to the above road, by way of showing the avidity with which the stock of judiciously located Railroads will be taken by those who know and appreciate their importance to the country. The Tonnewanda Railroad, commencing at Rochester, will pass through one of the most fertile sections of western New-York, and also through several flourishing villages terminating for the present at Attica, but eventually at Buffalo: it cannot fail of becoming a great thorough-fare for travel between those places, as well as for transportation of produce, raised along its line, to the canal. The travel alone, we have not a doubt, will produce an income sufficient to pay the interest upon the capital, whilst the transportation will pay the expense of the carrying establishment. It will not only be a convenience to those residing in its immediate vicinity, but will be to them in reality the means of greatly enhancing the value of their property. They would indeed be the gainers if their property was taxed to build the road, and they were to receive nothing back in the shape of dividends. Every improvement of the kind actually increases the wealth of the country through which it passes more than the cost of the improvement—of this fact none are better satisfied than those residing in the vicinity of the Erie Canal. The expenditure of fifteen millions of dollars, within ten years, in the state of New-York, for the construction of Railroads and Canals, would not only increase the value of property to that amount over its present value, but it would also enhance the value of property to at least that amount, beyond what it would be otherwise increased if the improvements were not made. Thus the owners of real estate will be greatly benefitted, the inhabitants residing on the route will be highly accommodated, the travelling community will find their convenience greatly promoted, and those who have money to spare, will find a safe and profitable investment for it. We cannot therefore doubt but that this road will be commenced at an early day, and prosecuted with spirit to its completion.

Richmond and Potomac Creek Railroad.—We were somewhat surprised to find the editor of the Richmond Whig opposed to this contemplated railroad. His uniform devotion to the cause of internal improvements in Virginia, led us to anticipate a ready support of the measure from him. He, however, in referring to the following communication from Virginia's able engineer, has explained the reason of his objection to the measure, (a desire to see the James and Kanawha improvement undertaken,) and it is one, we admit, which in many cases would be satisfactory—but not in the present, for we believe that the only way to do any thingin Virginia, towards improving her internal communication, at an early period, is to project works in the different parts of the state, that the whole population may become interested in them. There must be a general, a pervading desire for them, before much can be done.

There can be no doubt, we think, of the far greater importance to Virginia, but more especially to Richmond, of the *James* and *Kanawha* improvement—yet we are not sure but that this contemplated railroad would rather facilitate than retard that work, as it would serve to familiarise the inhabitants to such improvements; and they would of course see and feel, if they travelled much, the vast importance of such works to individuals, as well as to the public.

We should be much gratified to see this road in progress, as it is another and an important link in the "grand Atlantic chain." We give the annexed letter of Moncure Robinson, Esq. who, as the editor of the Whig well says, is "high authority," and we certainly agree with him that Mr. Robinson ought to be employed to survey the route.

Broad Mountain, Schuylkill Co. Pa.
July 31st, 1833.

My Dear Sir—I had intended to have had the pleasure of seeing you, when I was last in Richmond, but I understood, at the time that you were occasioned some annoyance by a subpœna of the United States Court in the case of Randolph, and deemed it as well not to trouble you with other matters.

I wished to have said a word to you, and to have asked your aid in behalf of the Richmond and Potomac Creek Railroad. Next to the James and Kanawha Improvement, nothing which has been proposed in Virginia, seems to me to promise such benefits to the city of Richmond, and to the State at large, and as the amount required for its execution would be comparatively small, there seems to be only requisite some little concert among those who can appreciate the importance of the Improvement, to induce its being taken up and effected. If a survey could be had, and a report and estimate be made by the next session of the Legislature, and a charter and pledge of aid to some limited extent from the State be then obtained, I should entertain no doubt that the necessary remaining stock could be made up by subscription. You can better judge than myself, how the first step in the matter (the survey) may be effected. If the necessary sums for the purpose could be made up in Richmond and Fredericksburg, I would suggest an application by some of the citizens, to the War Department, for an immediate survey of the Route, by some of the members of the Topographical Corps.

I have taken the liberty of writing you on this subject, from a belief that you will, with pleasure, co-operate in favor of a measure, which I feel assured will, if executed, be fraught with most important results to our Ancient Dominion. The limits of a letter would not admit of my presenting to you the many views in favor of it; and I should feel it unnecessary to do so, as your own reflections will, I have no doubt, readily suggest them. Allow me to ask your attention to it, and the co-operation of your press in its behalf, if you should, on examination, entertain as favorable impressions of the scheme as I think you will.

I remain, dear sir, yours, very truly,
M. Robinson.

J. H. Pleasants, Esq.

Chemung Canal.—The navigation on this canal has commenced, and several boats passed on the 26th ult. between Havana and the summit level at Horse Head.

GEORGIA RAILROADS.—As we anticipated, *Georgia* will continue the Railroad from Augusta to the interior of the State, if not to the Alabama line. Meetings have been held at Sparta, Powelton, and Mount Zion, on the 13th and 14th ult., at which over 100,000 dollars were subscribed to the stock of the Augusta and Eatonton Railroad. Further efforts are also making in North Carolina—than which, no State *needs* them more, or would be more benefitted by Railroads; one or two principal lines from *tide water to the mountains*, with branches, and one main line from north to south, connecting the Petersburg road with another in South Carolina, at Cheraw, would soon give to North Carolina a new aspect. Thus it is that the true interests of the country are to be promoted—and he who aids in the extension of works designed to facilitate the intercourse of the different States, or even of remote parts of the same State, is far more entitled to the gratitude of his countrymen than he who spends a whole life fattening upon the spoils of the enemy, or "feeding at the public crib."

DANSVILLE AND ROCHESTER RAILROAD.—By the following extract from the Dansville (N. Y.) Chronicle, we learn that strong hopes are entertained of the success of their Railroad. Of its importance to those flourishing villages—or rather city, one of them—no one can entertain a doubt, and of its construction, at an early period, *we* have not a doubt.

With the friends of this important project, it has been, until recently, a matter of doubt whether the stock would be taken up, were the books for subscription opened, because of the general *pressure* in the money market; but late occurrences have given a new impulse to the spirit of enterprize, and removed all doubts that existed upon the subject, affording the greatest assurance that no difficulty whatever will now be experienced in disposing of the stock. In Rochester, and all the places interested, the greatest anxiety to have the books opened and the necessary measures adopted for the speedy consummation of the matter, is manifested. The Commissioners appointed under the act to incorporate this Company are to meet in Geneseo to-morrow, to determine upon the time most expedient to open the books for subscriptions, and we are informed that the time contemplated is the early part of next month. *We think the sooner the better.*

By letters received in this village from influential and intelligent gentlemen of Rochester, and from other sources, we learn that capitalists *there* are anxious for an opportunity to take the stock; that they consider the prospect of a profitable investment of money in the stock of this company far more certain than in that of the Tonnewanda Route, the capital stock of which ($500,000) was all taken up in Rochester on the 14th inst. *before the books had been open three hours;* a fact which proves conclusively that the stock of the Dansville Railroad would be eagerly sought after.

The route of the road to this village is one of the most delightful in the world—the country level, rich, and fertile—a portion of it in a high state of cultivation and rapidly advancing in wealth—and the village of Dansville, at its termination, is one of the most flourishing and pleasantly situated villages in Western New-York. Its hydraulic privileges are presumed to be equal, if not superior, to those of Rochester, as they are more *extensive*, and afford better opportunity for erecting the various kinds of manufacturing establishments. It is already quite a manufacturing town, yet not one hundredth part of the Mill Sites are occupied - and the moment it is ascertained that we are to have a Railroad, capital will find its way here, our water privileges be occupied, and Manufacturing Establishments spring up all around us; the result of all which will be—*heavy dividends upon the Capital Stock of the Dansville and Rochester Railroad.*

MAD RIVER RAILROAD.—We think the following Report of the United States Engineer, upon his surveys, cannot fail to afford satisfaction to the friends of this road. It is with real pleasure that we lay it before our readers, although we recently devoted a large space to the same subject. The *importance* of the work to the great west will warrant us in referring often to it.

Report of the United States Engineer, in relation to the Mad River and Lake Erie Railroad, submitted to the Commissioners, at their meeting at Springfield, Ohio, on the 31st ult.:

SPRINGFIELD, July 31, 1833.

SIR,—I herewith submit an estimate of the probable expense of constructing the Mad River and Lake Erie Railroad, as determined from the experimental survey made under my direction, during the past and present seasons.

A more full and minute report will be made upon the return of the party to Washington, accompanied by maps and profiles of the whole route. The limited time we have been engaged, and the necessity of attending to other duties, have rendered the completion of these drawings at this time impracticable.

The excavation and embankment have been estimated at 10 cents the cubic yard; the masonry at $2 the perch; and the grubbing at $2 the rod—prices amply sufficient to cover these respective items. No doubt is entertained that the work can in many instances be done at much lower rates. It was thought best, however, that the estimate should, if any thing, exceed the actual cost, rather than fall below it.

The grading upon the road will be easier than was at first anticipated, and can in many instances be much improved upon its final location, when more time and labor will be necessarily expended than could reasonably be expected upon an experimental survey. But even upon the line as at present traced, they are such as to do away entirely with the necessity of any stationary power whatever, rendering it peculiarly adapted for the employment of locomotive engines exclusively, in transportation upon the road. The advantages of the locomotive system over any other, especially in the transportation of passengers, is too evident to need any remark.

TABLE OF GRADES.

Under 10 feet per mile,	63 miles,	1090 feet.
Between 10 and 20	40	3200
" 20 and 30	22	4240
" 30 and 40	12	4640
" 40 and 45	7	4640
" 45 and 50	5	2000

The whole length of curvation upon the road is 12 69 miles, of which 9.81 miles will have a radius of from one to four miles; of the remainder, the radius need not, in any case, fall short of three thousand feet. The line is capable of equal improvement as respects the length and location of the curves, as in case of the gradation.

The estimate has been proposed separately, with a view to the employment of either steam or horse power. Should the former be determined upon, the necessity of a horse path will be dispensed with, and of course this amount will be saved in the cost of construction.

Estimate of the cost of the Mad River and Lake Erie Railroad, *double track:*
From Sandusky City to Dayton, 153 miles.
Gradation and masonry, average per mile, $2,877 31, - - - $440,228 40

Superstructure of one mile.

480 perches of broken stone, at $1,	$480 00
2,640 sleepers at 20 cents, - -	528 00
36,582 feet scantling, 6 inches by 6, at $22 per thousand, - -	1463 50
46 tons iron, at $50, - -	2300 00
1,936 lbs spikes, at 9 cents, -	174 24
1,400 splicing plates, at 3 cents, -	42 30
320 rods workmanship, at $4 50,	1440 00
1 road crossing, - - -	20 00
2 farm crossings, - - -	16 00
Removing earth and grading,	100 00
1 sliding, - - - - -	354 06
	$6918 20

Multiplied by 153, - - -	$1,058,484 60
Grading and masonry, as above,	440,228 40
	$1,498,713 00
Add 10 per cent. for contingencies, salaries of engineers, superintendants, &c. - -	149,873 30
	$1,648,584 30

or $10,775 06 per mile, for locomotive power.

This estimate is based upon the presumption that locomotive engines alone will be used, and that there will be no necessity for a horse-path. Should this, however, not be the case, the cost of the horse-path must be added. The following will then be the cost of the road:

Graduation and masonry, -		$440,228 40
Superstructure, as above, -		1,058,484 60
1280 perches broken stone, at $1,	$1280 00	
Making horse-path,	200 00	
For one mile,	$1480 00, by 153,	226,440 00
		$1,725,153 00
Add for contingencies, &c. as above, 10 per cent. -		172,515 30
Making the whole cost, including horse-path, - - -		$1,897,668 30

or $12,403 06 per mile.

I am, sir, very respectfully, your obedient servant,

HOWARD STANSBURY,
U. S. Assist. Civ. Engineer.

To Horatio G. Phillips, Esq. President of the Mad River and Lake Erie Railroad Company.

Estimated Cost of Grading and Masonry.

FIRST DIVISION.—From Sandusky City to Tiffin, on the east bank of Sandusky river, 35 miles, $73,711; or an average of 2,106 03 per m.

SECOND DIVISION.—From Tiffin to the north branch of Sciota river, 39 miles, $108,239 40; or an average per mile, $2,775 39.

THIRD DIVISION.—From north ridge of Sciota river, to the east branch of Mad River, near West Liberty, 32 miles, $119,149 70; or an average of per mile, 3,723 39.

FOURTH DIVISION.—From Mad River to Dayton, 47 miles, $139,127 30; or an average of per mile, 2,060 17.

Whole cost of grading and masonry from Sandusky City to Dayton, 153 miles, $440,228 31; or an average of per mile, $2,877 31.

Report of the Engineer in Chief to the Stockholders of the Ithaca and Owego Railroad Company.

The President and Directors of the Ithaca and Owego Railroad Company have the pleasure of submitting to the stockholders the subjoined report of the Engineer in Chief.

We deem it unnecessary to enter into a detail of the location and progress of the work, as that will appear in the full and ample developement of the Engineer in his report herewith submitted, in which we have entire confidence; but will confine ourselves to a few observations on the present and future prospects of the road, to which the stockholders look for a remuneration of their investments in the stock of the company. On this subject we have full confidence in the assurance, that if the calculations for the future can be regulated by the experience of the past, they are flattering.

The importance of a communication by canal or railroad by this route, from the waters and country of the north and west, with the

Susquehanna on the south, has been a subject of much calculation and speculation for several years past, and efforts for its completion have engaged the attention of the commercial portion of our community.

This communication will be effected in the completion of your railroad, and defies all competition by any other route, it being the most direct, least expensive, and shortest portage between the navigable waters of New-York and Pennsylvania.

The head of the inclined planes is 517 feet above the Cayuga Lake; thence running to Owego with an undulation of 21·12 feet per mile, considered equivalent to a level, through the Beaver Meadow, where the waters divide and flow north to the Gulf of St. Lawrence; and south to the Chesapeake Bay. On the streams thus formed along the line are 33 mills, and the immediate vicinity furnishes an abundant supply of timber.

From accurate calculations by the best informed merchants and carriers in the villages of Ithaca and Owego, we have derived the following statement:

The transportation from Ithaca for the year 1828 was, in exports, 10,678 tons; imports, 7,929 do.; total, 18,607 tons. For the year 1831, exports, 31,631 tons; imports, 11,525 do.; total, 43,156 tons.

Should we take the ratio of those years for the year 1834, when your road will be completed and in full operation, we could safely calculate the amount at 76,800 tons, equal to 320 tons a day. We have, however, after a moderate and careful review, concluded to present the following as a fair estimate of the amount of tonnage that will pass the railroad in the year 1834: Merchandise, 2,000 tons; wheat and flour, 5,000; pork, butter, and whiskey, 2,000; ashes, 1,000; plaster, 10,000; salt, 5,000; lime and stone, 1,000; lumber, 7,500; miscellaneous; 1,000; total, 34,500 tons.

In this estimate of tonnage, the article of coal has not been included. The rapid extirpation of wood in the improvement of the country, particularly along the line of the canal, has already enhanced its price, and could coal be obtained at a fair and reasonable rate, it would supercede the use of wood altogether, and enable the farmer to turn his reserved wood-land into arable, and thus increase his crops for market. The salt works alone would consume an immense amount; wood is now sold there for $2 per cord; and coal could be afforded there for $5 per ton, one ton of coal being equal to four cords of wood; thus making a saving of $3 in every four cords of wood. We might, therefore, rate the tonnage of coal higher, but shall estimate it at 8,000 tons.

When the Chenango Canal shall have been finished, we must expect a competition in the article of anthracite coal; but in the bituminous, from Towanda, a few miles below Tioga Point, there can be none. The distance from Carbondale, in the region of the anthracite coal beds, by the way of the Chenango canal, through Utica, to the salt works at Syracuse, will be 214 miles, with the canal duty from Chenango Point, heavy lockage and slow progress: the summit near Oriskany or Utica being 730 feet above the canal, and 320 above the Susquehannah at Chenango Point, giving 950 of lockage, and will require 119 locks of 8 feet lift, which at ten minutes' time (including delay) in passage, will be 1190 minutes. This being converted into distance at the rate of three miles per hour, or 20 minutes per mile, will, so far as time and wages are concerned, be equivalent to an extension of the canal a distance of 59½ miles.

From the same point, (Carbondale,) by the way of the Ithaca and Owego Railroad, Cayuga Lake and Canal, to Syracuse, it is 193 miles; the passage made from Owego to the Cayuga Bridge in eight hours.

Bituminous coal will always be in great demand: for cupola furnaces, however, anthracite is chosen; but for reverberatory furnaces, forges, smithies, family use, and the boiling of salt, the bituminous will be preferred, as it makes a more brilliant fire, the flame spreading its heat more readily around.

The Towanda iron ore and coal beds are 36 miles south of Owego, thence to Ithaca 29½ miles, from Ithaca to Cayuga Bridge 36 miles, (lake navigation free of toll,) thence to Syracuse, canal navigation by Montezuma, 42 miles; in the whole 143 miles.

The transportation from Towanda to Owego will be on the navigable waters of the Susquehanna. Steamboats of a light draught of water, such as are at present navigating the Connecticut river, can be successfully used, and some gentlemen at Owego have made the necessary investigations, and contemplate putting on one or more boats in the coal trade. This would immediately give us a direct, easy, and cheap communication between those coal beds and the Erie Canal. The coal beds are inexhaustible, extending for miles westerly.

The bituminous coal beds lie south-west of Newtown, at Peter's Camp, at the head of the Tioga river, probably part of the same vein existing at Towanda, and are 40 miles from the head of the feeder of the Chemung canal, and about the same distance westwardly from Towanda, accessible through a broken and mountainous country. The route from the head of the feeder of the Chemung Canal to the head of the Seneca Lake is 36 miles long, thence including the length of the lake 40 miles, thence on the Seneca and Erie Canals to Syracuse, 57 miles, making in the whole 173 miles, and passing 61 locks. This lockage being converted into distance, as on the Chenango Canal, will give an extension equal to 30½ miles. The time required on our railroad to ascend the whole elevation will take but twenty minutes, equal to an extension of one mile.

Thus it will be perceived that, as far east as Syracuse, we can transport anthracite coal cheaper than they can by the way of the Chenango Canal; and bituminous, than can be done by the way of the Chemung, as much cheaper as we gain in time and distance. About 80 tons of Carbondale and Towanda coal have been sold in this village during a few days' sleighing, at the price of from $8 to $12 per ton, and ground plaster carried back as the return load. By railroad and steamboats it could be afforded at $4 per ton.

The three furnaces at this place, although not on a large scale, would consume 244 tons annually. We have confidence, therefore, in making the following statement of revenue for the year 1834: Merchandise, 34,500 tons; coal, 8,000 do.; total, 42,500 tons.

Admitting we transport half of this amount, at the rate of $2 per ton, which is from one to two dollars less than the usual price, $42,500; the other half by carriers paying toll only, $21,250; passengers that will concentrate and pass our road from north and south, 50 a day, at $1, 365 days, $18,250; country travel along the line of the road, 50 per day, at 50 cents, 365 days, $9,125.

Amount of revenue as per preceding statement - - - - - -	$91,125
The annual expenses of the road, at a liberal calculation - - - -	20,000
Leaving a revenue of - - -	$71,125

The cost of the road will not exceed its capital. $300,000.

Although the above result is great, yet we must have confidence in its reasonableness, from our knowledge of facts and facilities upon which it is founded.

The salt manufactured at the Montezuma works can be reduced in price for the southern market, to the difference in the cost of distance of transportation between Syracuse and Montezuma, being 35 miles.

The plaster beds on the east bank of the Cayuga Lake, but thirty miles from Ithaca, are abundant.

Limestone, making the first quality of white lime, is inexhaustible on both sides of the lake, and there is a market for it south as far as Wilkesbarre, on the Susquehanna, 150 miles; none of good quality being found in the intermediate region. There are also at Springport, on the east bank of the Cayuga Lake, inexhaustible beds of water limestone of the best quality, the lime from which we are now using in the construction of our culverts.

Lime, therefore, will be an important source of revenue, as well as coal, salt, and plaster. The sum of $71,125, which is a fraction over 23 per cent. nett on the capital, would therefore be the immediate amount of revenue on the completion of the road: and it is an important consideration, that the amount of revenue which the company may receive is not limited by the charter. But in extending our views to the future business of the road, we must calculate upon its increase from Lake Ontario, 70 miles north of Ithaca, by a channel or route crossing the canal at Montezuma, which is 18 miles from Sodus Bay, through a country abounding with iron ore. Besides, our road must be considered as an important link in the great connexion between Buffalo, the mart of the western states, and Philadelphia, Baltimore, and New-York. This presents its value in a most interesting light.

We found the above calculation also on the fact that simultaneously, and without concert, a line of communication with New-York is in preparation. A charter has been granted for a railroad from the termination of our road on the north to Geneva, and one from Geneva to Canandaigua, leaving but 90 miles to connect us with Buffalo, and thus unite the navigable waters of the Susquehanna with Lake Erie.

The distance from the Erie Canal at Montezuma to Sodus Bay is 18 miles, which bay on Lake Ontario is 90 miles nearer the city of New-York by this route than any other. It has long been contemplated, and actual movements and reconnaissances are making, to connect Lake Ontario with the Erie Canal at Montezuma by a canal, which it is believed also will drain the Cayuga marshes (the fall from those marshes to that lake being 138 feet) more effectually than any other mode, which ought to be a great inducement with the state to contribute liberally towards its completion.

The distance from the city of New-York to Ithaca is 210 miles, 17 of which, through a part of New-Jersey, is already traversed by the Paterson Railroad, which would, without doubt, be carried up to the state line, leaving from the southern termination of our road about 150 miles to be completed by the great New-York and Erie Railroad Company, (our road now embracing one-seventh of the whole distance) to connect New-York with the Erie Canal navigation by the Cayuga Lake.

The distance from Owego, the southern termination of our railroad, to the northern termination of the contemplated Lackawanna and Susquehanna Railroad, is 35 miles; and if the Hudson and Delaware Company would construct the road through Pennsylvania, the distance above stated would soon be passed by a connected road, the stock for which would readily be subscribed, and the company would then have a greater market to the north by our railroad and the Chenango Canal, than they now possess by the Hudson.

In the present state of things, without reference to future improvements, the Ithaca and Owego Railroad must of necessity take a large portion of the trade along our lake and the Erie Canal, when repeated experiments shall show its advantages by the diminished expense of transportation.

The navigation of the Susquehanna is at least four weeks earlier in the spring than the eastern sections, and two weeks earlier than the western section of the Erie Canal. Advantage has been taken of this knowledge by some of our merchants, in getting to an early market, and produce has been sent from this village to Baltimore, there sold, goods have been purchased in New-York with the avails, shipped to Albany, and have been forwarded by the first boats on the opening of the canal.

	Plaster, per ton.	Salt, per bbl.
The total cost and transportation of Cayuga plaster and salt, from Ithaca to Harrisburgh, on the Susquehanna and our railroad, will be - - -	$5,94	$1,94
The cost of foreign plaster and salt at Philadelphia, and transportation to Harrisburgh - - -	7,75	2,25
Difference	1,81	31
	Flour, per bbl.	Whiskey, or Pork. pr bbl.
The total expense of transportation of flour, pork, and whiskey, from Ithaca, passing Baltimore to New-York or Boston, by our railroad and the Susquehanna river - - -	70	1,23
Do. by way of Erie Canal from Ithaca to New-York	81	1,50
Difference in favor of Railroad	11	27

So far as we have progressed in the construction of the road, we have been influenced by the limitation of our capital, and economical considerations, and have left the question as to the use of stone or wood to depend upon the convenience and cost of obtaining those materials, considering a durable and imperishable road at ten per cent. increase of cost the cheapest. In all works of this kind great prices are demanded and paid at the commencement, produced by the conviction that the work must progress, and that the article wanted is the only one that at the moment can be procured. Some purchases of timber were made from 12 to 14 dollars a thousand feet, board measure, which we can now obtain at 10 or 11 dollars.

Stone rails, which it was supposed we could only procure from the limestone ledges along the shore of the Cayuga Lake, at $3 per perch, (16½ cubic feet,) we can now procure along the line of road at 75 cents, in some of the quarries opened for the building of culverts and viaducts.

Some embarrassments occurred last summer in the financial concerns of the company, arising from misrepresentations and misconceptions, upon which a few stockholders in New-York were induced to refuse payment upon the calls of the company. The President, Treasurer, Secretary, and Engineer, repaired to New-York with the books, maps, and vouchers, and made a full and ample exposition of the concerns and affairs of the company, with which those stockholders were satisfied. The report of a committee expressing that satisfaction, and calculating large profits upon a basis of expense much greater than is now ascertained to be necessary to make the road, is herewith annexed. The work has not, however, stopped, and for the advance of that portion of stock due, we have been sustained by our Treasurer and friends in Albany.

At the last election of Directors held in February, those gentlemen in New-York, who held 542 shares of stock, were represented by their proxy, who also represented 411 shares held in Owego; and those gentlemen holding 1807 shares, residing in Albany, Utica, and Ithaca, were there in person or by proxy. All united in the election of the present Directors, thereby evincing a unity of action favorable to the advancement and prosperity of the work.

All of which is respectfully submitted. By order of the Board of Directors.

Francis A. Bloodgood, President.
Ithaca, March 14, 1833.

Railroads.—The railroad, the working of which has just commenced between Stonington, Conn. and Providence, R. I. forms an important part of the route between Boston and New-York. The distance of the entire line of railroad, when connected at Providence with the present line, will be about 80 miles. The public generally are not aware that a Long-Island railroad of *less than one hundred miles* might reduce the time of travelling between Boston and New-York to about twelve hours, thereby obviating the hazard of passing Long-Island Sound, and of the lines of steamboats.

It is less than one hundred miles from Brooklyn ferry to Greenport, formerly called Sterling, in the town of Southold. Greenport has a fine harbor, situated between Shelter Island and the main Island, and has good depth of water—easy of access—never troubled with ice. There is already a considerable village, where two whaling ships are annually fitted out, and many smaller vessels are owned and employed.

It is probable the railroad between Brooklyn and Jamaica will be made the next season, embracing 12 miles of the proposed route. The remaining distance to Greenport is over a level country, having many facilities for constructing a cheap railroad. A steamboat could pass between Greenport and Stonington in 2 hours, during the whole year.

We have no doubt that many persons who have occasion to travel between New-York and Boston, would at this time take the route through Long-Island, were they aware of the fact that lines of stages pass *three times a week* between Brooklyn and Sag-Harbor, and that three fine packets are passing *every day* between Sag-Harbor and New-London.—[L. Island Star.]

Excavation for the Railway.—The excavation which is now about being made in a hill in Lowell, for the bed of the contemplated railway, may be considered, next to the various manufacturing establishments, the most wonderful "Lion" of the place. This hill is near the *terminus* of the railway, in the neighborhood of the Brewery, but not in a populous part of the town. It consists of a *ledge* of rock, which is about three hundred yards in length, and the average depth of the excavation is about forty feet. It is thirty feet wide at the bottom, and sixty at the top, and the masses of stone which have already been riven from the ledge by blasting, seem to be immense.

A contract was originally made with a person to effect a sufficient passage through this hill for the sum of seventy-two thousand dollars. He commenced the undertaking, employed sixty workmen for about four months, *and failed*. Another person then undertook to finish the work for the same amount—but after a few months, he also abandoned the undertaking. Those individuals are said to have both been acquainted with the nature of the business which they undertook—but they were deceived by the quality of the rock, which consists principally of gneiss and mica, through which, although much lighter and softer than limestone or granite, it was found much more difficult and expensive to effect a passage, than if it was composed of those more solid materials. The *drilling* may not be so difficult, but the rocks lying in numerous horizontal strata almost defy the power of gunpowder, and heavy, blasts which would shiver an immense mass of granite, are frequently found here to produce but little effect. In addition to this, the ledge is found to be full of springs of water, which sometimes render it necessary for the workmen to expend much time, and exercise no inconsiderable ingenuity, in counteracting its effects. There are also found in the lower part of the ledge, huge masses of quartz, and a species of rock composed almost entirely of hornblende, which is of course almost impenetrable to the drill.

The "Locks and Canal Company" have now undertaken to complete this work, at the expense of the Railroad Company. About seventy men are constantly employed, and the work advances as rapidly as the attending circumstances will allow. Seven hundred kegs of powder have been used in blasting since the latter part of April, when the work was recommenced. About fifty kegs are used every week. This powder is manufactured at Mr. Oliver M. Whipple's mills, situated about a mile from the centre of the town. About one-third of the work is already executed, and it is expected that in the course of the next season this stupendous undertaking will be completed.—[Lowell Journal.]

Allegheny Portage Railroad.—A late Ebensburg Spy contains the following encouraging notice of a portion of the railroad over the Allegheny:

"We have lately viewed that part of the Allegheny Portage Railroad which lies between Croyle's Mills and the borough of Conemaugh, and were much pleased with its appearance. It would be worth a three days' ride to see the manner in which skill, industry and science, aided by money, have overcome the difficulties which presented themselves, and broke through the obstructions which nature had thrown in the way, in that rough and rugged section of the country.

"A few miles below Croyle's Mills the Conemaugh river bends to the South, and after traversing a sinuous course of more than three miles, is again seen across a narrow hill at the distance of about three hundred feet from its place of departure. At this point the road is cut through the hill and carried over the river on a viaduct supported on a strong and neatly built semicircle stone arch of eighty feet span, rising from abutments at the height of 20 feet above the river. The whole distance from the water to the arch being sixty feet. The arch is now complete and the centres removed. It presents a grand and bold appearance, and seems capable of resisting any thing short of the concussions of an earthquake. This work does credit to the Engineer who planned it, and to the worthy contractors, Snodgrass and Dunro, who constructed it.

"The viaduct is connected with a hill at the west end by an immense embankment, some parts of which are seventy feet in height.

"The vicinity of this viaduct will be ere long the site of extensive water-works. The whole stream, which is considerable, can be conveyed through the Hog-back hill, by a deep cut or a short tunnel, and thus gain a fall of more than forty feet.

"A few miles below the viaduct the road passes through a tunnel, nine hundred feet in length, the greater part of which has been excavated out of a solid rock. Abut one hundred feet at each end of the tunnel is handsomely arched with cut stone, and the entrances will be ornamented with columns of the same.

"Many of the rails are laid upon this section of the road which we visited, and preparations for laying the residue are in rapid progress. This is the case, we are informed, on the whole line of the Portage, and the prospect of traversing the whole course from Hollidaysburg Conemaugh, during the present season, is now very certain."

Liverpool and Manchester Railway.—The half yearly meeting of the proprietors of this company was held on Wednesday, the 24th of July; Richard Harrison in the chair. A report of the proceedings of the company, from the 1st of January to the 30th of June, was read by the treasurer, Mr. Booth, which appeared to give satisfaction to those assembled.

The quantity of merchandize conveyed between Liverpool and Manchester, during that period, was 68,285 tons—to different parts of the road, 8,712 tons—quantity between Liverpool, Bolton, and Manchester, 19,461 tons. Total quantity moved along the line, 94,458 tons.

Total quantity of coal from various parts of the line, 42,721 tons—total number of passengers booked in the company's office, 171,421.

The number of trips of 30 miles performed by the locomotive engines, with passengers, 3,262—with goods, 2,244. Total, 5,506.

Half Year's Receipts.—Coaching department, £44,130 17 2—General merchandize, £39,301 17 3—Coal department, £2,638 15 9. Total receipts, £86,071 10 2—Total expenses, £52,900 9 1. Profit, £33,171 1 1. Which allows a dividend of four guineas per shar leaving a few hundred pounds in bank. In the expenses of the half year the sum paid for the purchase of two new engines is included. A considerable saving is expected to take place by the recent application of brass tubes in the engines, in lieu of copper tubes previously used, that were almost continually bursting. Mr. Dixon (a gentleman in service of the company) has the merit of this important suggestion. The new tunnel is in rapid progress, about one-fifth of it being already completed.--[Balt. paper.]

Sea-Serpent Harpoon. By MECHANICUS. To the Editor of the Mechanics' Magazine.

SIR,—In these days of inventions and of sea-serpents, I deem it meritorious to contrive something for the destruction of such ugly looking monsters as have lately furnished such wonderment to the good people *down east*. Now, sir, if any of your readers should ever take a *notion* to go either whaling or *sea-serpenting*, I would advise them to be provided with some half dozen of the *machines* of which I send you the drawings.

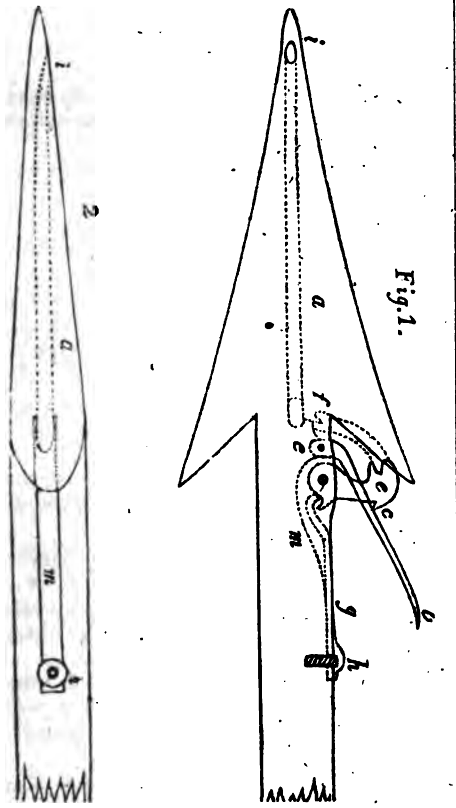
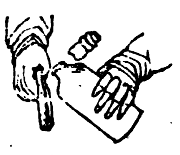


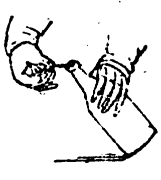
Fig. 1 is a harpoon with two barbs, and may be of any convenient size and length; *a* is a cavity drilled in from *i*, (which may be done with the point bent,) a little beyond the root of the barbs at *f*; a groove is cut in the shank under one of the barbs as shown at *m*, Figs. 1 and 2; in this groove is fitted the cock *e*, the main spring *g*, fastened by its screw *h*, and under the barb, at *f*, a percussion pin, or head, which communicates with the cavity *a*. A trigger with two prongs, between which the cock works, is set into two sockets at *o*, one on each side of the groove *m*, and fastened by a screw-pin, as shown in the figure; the trigger has a small hole in it, just above the space for the cock, for the point *c* to slip into to hold the cock back.

Now for the operation. A small charge of powder is put into the cavity, and over this a proper quantity of some poisonous substance, the effects of which shall be powerful and rapid; a percussion cap is put on the head, and the instrument is then cocked, as shown at Fig. 1. The consequence of plunging such an instrument into a soft or fleshy substance must be obvious to any one, for as the flesh closes over the barb it strikes the end of the trigger at *b*, and throws the point of it down behind the head of the screw *h*, and by the consequent explosion of the powder the poison is forced into the body from the orifice *i*, and produces death at the same time that it fastens the object.

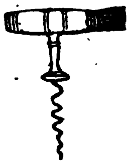
Now, sir, as I am the inventor, all I can say in praise of the invention is, that I should not like to be harpooned with such a machine. MECHANICUS.

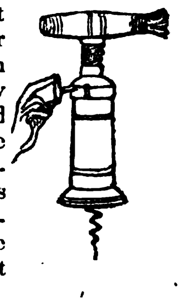
THE PROGRESS OF INVENTION EXEMPLIFIED.—Many volumes have been written on the gradual refinements of language, and learned men have pointed out the immense stride in improvement which has arisen from an unimportant innovation, yet millions had spoken the imperfect language without dreaming of the simple means by which the finishing touches could be given to it. The effects also which have flowed from apparently the most simple contrivances are almost incredible; and should those who are familiar with their most perfect forms be but casual observers, they may be startled at the exaggerated terms in which their value may be estimated —or disgusted with the claims of some mechanic, who, by merely adding a wheel or pulley, or giving a trifling difference to their proportions, may, by these means, have been the first to make the machine efficient. The simple process of drawing a cork will furnish the necessary illustrations.





The inventor of bottles is unknown; but these were in use for centuries before corks were thought of, and these again were employed for generations before a convenient method was hit upon for their extraction. The exhilarating contents could then only be tasted by what is now technically called "beheading the bottle." More expert practitioners had many opportunities of shewing their skill in removing the impediment by a dexterous twist of the fingers; or, if that were impracticable, teeth were called in as their natural auxiliaries; here, however, in many cases, it was doubtful whether the cork would follow the teeth, or the teeth remain *in* the cork; and if an obstinate remnant would remain, a *nail* was a ready means of dislodging the stubborn plug, particle by particle,—when at any time, through an impatience of the nibbling labor, or a despair of accomplishing a clean extraction at all, it was resolved at once to send the obstacle the wrong way: this was then, indeed, an invaluable instrument. A pair of skewers, or forks, inserted "witchwise," would sometimes accomplish those difficult cases which had baffled the exertions of all the naturals. Twisting the lower extremity of the "bare bodkin" into a spiral form, and adding a handle to it, was the thought of a master genius; and, in this shape, mankind, for ages, were contented to avail themselves of its services—and even at the present hour, some barbarous, uncouth countries and districts may be named where it is still the extractor in most general use. In our civilized land, it must be yet in the recollection of many, that this was, in numerous cases, a very inefficient machine; and the pleasure of beholding the generous beverage beaming through a crust of many years, was cruelly damped by the experience, that in proportion to the pains taken in fixing the cork, was the mental agony which must be endured during all attempts to remove it. Jovial fellows, who forget those days, in their moments of inspiration, may talk indeed of their Phillises, their Ianthes, their Delias, their Saccharissas, their Chloes, and their what-nots,—let them henceforth mingle a little gratitude with their admiration, and glorify a nymph greater than them all. Miss O'Rourke, like her own exquisite potteen punch, was a delightful compound from ingredients, both mental and corporeal, of the most opposite nature. The friend of Kosciusko, and the authoress of the Rhapsody, which afterwards rung so often throughout the country to the favorite tune (Gramachree) of the patriot Pole,—such another hostess was not in England wide, and no other of her order ever conferred so great a benefit on bottle-suckers as she did, by her superlative invention of placing a *button* at the end of the screw-worm. Henceforth the decantering process was a mere matter of routine. When, in her green old age, Death laid his hand on the inventress, a piratical screw-maker took to himself the credit and profit of the button addendum. Yet Miss O'Rourke shall never be forgotten, even although her master-piece, some few years later, was eclipsed, and may be yet superceded by the *King's Screw*, which can receive no addition either to its beauty or convenience, except it be probably some little steam appendage to make it self-acting.—[Stuart.]





CINNAMON STONE.—M. Laugier has found the massive cinnamon stone of Ceylon to be composed of silex 38, lime 33, alumine 19, ox. iron 7. He regards it as a silicate of lime and alumine, with an accidental portion of iron.—[Bull. Univ.]

ALBURNUM.—Mr. Knight has asserted, in the Philosophical Transactions that having partially detached strips of bark of the walnut tree, of several inches' length, from the alburnum, in the spring, he introduced beneath such bark two folds of paper, each of which was coated on both sides with bees' wax; so that such strips of bark were placed wholly out of contact with the alburnum, or other bark of the tree, except at their upper ends. Air and light were excluded by a covering of clay till autumn, when as much alburnum was deposited upon the paper, along the whole extent of the bark, as was deposited by a similar extent of bark, which retained its natural place and state.—[Loudon's Magazine.]

Office of the Delaware and Hudson Canal Company.

Honesdale, Wednesday, August 28, 1833.

Received at Honesdale, from Carbondale, by Rail Road, during one week, ending this day, 1712 R. R. wagons, containing 4,280 tons coal.

Total amount of coal received since 13th April, 68,077½ tons.

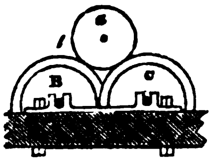
Also received during the week, 117 Rail Road wagons, containing 171,87 feet lumber.

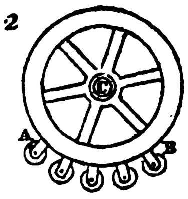
Total amount of lumber received since 13 April, 3,091,261 ft.

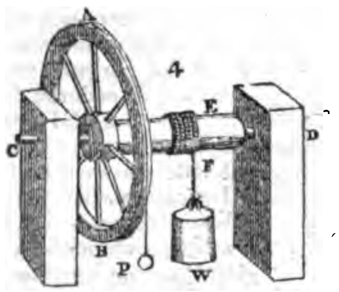
Arrived at Honesdale from Rondout during the week, 176 boats, containing general freight.

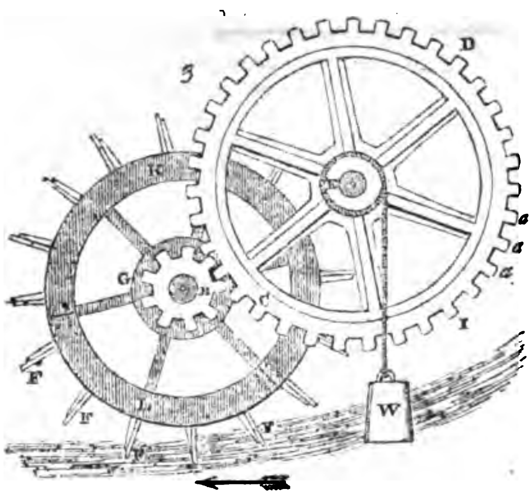
Cleared at Honesdale for Rondout, during the week, 168 boats, containing 4,040 tons coal.

Total amount of coal cleared at Honesdale for Rondout since 25th April, 60,270 tons. J. B. WALTON, Collector.









To contrive a Proper Machine that shall move a Given Weight with a Given Power, or, with a Given Quantity of Force, shall overcome any other Given Resistance. [From Emerson's Principles of Mechanics.]

If the given power is not able to overcome the given resistance, when directly applied, that is, when the power applied is less than the weight or resistance given, then the thing is to be performed by the help of a machine made with *levers, wheels, pullies, screws,* &c., so adjusted, that when the weight and power are put in motion on the machine, the velocity of the power may be at least so much greater than that of the weight, as the weight and friction of the machine, taken together, is greater than the power. For on this principle depends the mechanism or contrivance of mechanical engines, used to draw or raise heavy bodies, or overcome any other force. The whole design of these being to give such a velocity to the power in respect of the weight, as that the momentum of the power may exceed the momentum of the weight. For, if machines are so contrived that the velocities of the agent and resistant are reciprocally as their forces, the agent will just sustain the resistant; but, with a greater degree of velocity, will overcome it. So that, if the excess of velocity in the power is so great as to overcome all that resistance which commonly arises from the friction or attrition of contiguous bodies, as they slide by one another, or from the cohesion of bodies that are to be separated, or from the weights of bodies to be raised, the excess of the force remaining, after all these resistances are overcome, will produce an acceleration of motion proportional thereto, as well in the parts of the machine, as in the resisting body. Now, how a machine may be contrived to perform this to the best advantage will appear from the following rules:

1. Having assigned the proportion of your power and the weight to be raised, the next thing is to consider how to combine levers, wheels, pullies, &c., so that, working together, they may be able to give a velocity to the power, which shall be, to that of the weight, something greater than in the proportion of the weight to the power. This done, you must estimate your quantity of friction, by the last prop.; and if the velocity of the power be to that of the weight still in a greater proportion than the weight and friction taken together is to the power, then your machine will be able to raise the weight. And note, this proportion must be so much greater, as you would have your engine work faster.

2. But the proportion of the velocity of the power and weight must not be made too great neither. For it is a fault to give a machine too much power, as well as too little; for if the power can raise the weight, and overcome the resistance, and the engine perform its proper effect in a convenient time, and works well, it is sufficient for the end proposed. And it is in vain to make more additions to the engine, to increase the power any further; for that would not only be a needless expense, but the engine would lose time in working.

3. As to the power applied to work the engine, it may be either a living power, as men, horses, &c., or an artificial power, as a spring, &c., or a natural power, as wind, water, fire, weights, &c.

When the quantity of the power is known, it matters not, as to the effect, what kind of power it is. For the same quantity of any sort will produce the same effect; and different sorts of powers may be applied, in an equal quantity, a great variety of ways.

The most easy power applied to a machine is weight, if it be capable of effecting the thing designed. If not, then wind, water, &c., if that can conveniently be had, and without much expense.

A spring is also a convenient moving power for several machines; but it never acts equally, as a weight does; but is stronger, when much bent, than when but a little bent, and that in proportion to the degree of bending, or the distance it is forced to. But springs grow weaker by often bending, or remaining long bent; yet they recover part of their strength by lying unbent.

The natural powers, wind and water, may be applied with vast advantage to the working of great engines, when managed with skill and judgment. The due application of these has much abridged the labors of men; for there is scarce any labor to be performed, but an ingenious artificer can tell how to apply these powers to execute his design, and answer his purpose. For any constant motion being given, it may, by a due application, be made to produce any other motions we desire. Therefore, these powers are the most easy and useful, and of the greatest benefit to mankind. Besides, they cost nothing, nor require any repetition or renewing, like a weight or a spring, which require to be wound up. When these cannot be had, or cannot serve our end, we have recourse to some living power, as men, horses, &c.

4. Men may apply their strength several ways, in working a machine. A man of ordinary strength, turning a roller by the handle, can act for a whole day against a resistance equal to 30 lbs. weight; and, if he works ten hours in a day, he will raise a weight of 30 lbs. 3½ feet in a second; or, if the weight be greater, he will raise it so much less in proportion. But a man may act, for a small time, against a resistance of 50 lbs., or more.

If two men work at a windlass, or roller, they can more easily draw up 70 lbs. than one man can 30 lbs., provided the elbow of one of the handles be at right angles to that of the other. And, with a fly or heavy wheel applied to it, a man may do one-third part more work, and, for a little while, act with a force, or overcome a continual resistance, of 80 lbs., and work a whole day when the resistance is but 40 lbs.

Men used to carrying, such as porters, will carry, some 150 lbs., others 200 or 250 lbs., according to their strength.

A man can draw about 70 or 80 lbs. horizontally; for he can but apply about half his weight.

If the weight of a man be 140 lbs. he can act with no greater a force in thrusting horizontally, at the height of his shoulders, than 27 lbs.

As to horses: A horse is, generally speaking, as strong as five men. A horse will carry 240 or 270 lbs.

A horse draws to greatest advantage when the line of direction is a little elevated above the horizon, and the power acts against his breast; and can draw 200 lbs. for eight hours in a day, at two miles and a half in an hour. If he draw 240 lbs. he can work but six hours, and not go quite so fast. And, in both cases, if he carries some weight, he will draw better than if he carried none. And this is the weight a horse is supposed to be able to draw over a pulley, out of a well. In a cart, a horse may draw 1000 lbs.

The most force a horse can exert is when he draws something above a horizontal position.

The worst way of applying the strength of a horse is to make him carry or draw up hill. And three men, in a steep hill, carrying each 100 lbs., will climb up faster than a horse with 300 lbs.

Though a horse may draw in a round walk of 18 feet diameter, yet such a walk should not be less than 25 or 30 feet diameter.

5. Every machine ought to be made of as few parts, and those as simple as possible, to answer its purpose; not only because the expense of making and repairing will be less, but it will also be less liable to any disorder. And it is needless to do a thing with many, which may be done with fewer parts.

6. If a weight is to be raised but a very little way, the lever is the most simple, easy, and ready machine. Or if the weight be very great, the common screw is most proper. But if the weight is to be raised a great way, the wheel and axle is a proper power, and blocks and pullies are easier still; and the same may be done by the help of the perpetual screw.

Great wheels, to be wrought by men or cattle, are of most use and convenience when their axles are perpendicular to the horizon; but if by water, &c., then it is best to have their axles horizontal.

7. As to the combination of simple machines together, to make a compound one; though the lever, when simple, cannot raise

a weight to any great height, and, in this case, is of little service, yet it is of great use when compounded with others. Thus, the spokes of a great wheel are all levers, perpetually acting; and a beam fixed to the axis to draw the wheel about by men or horses, is a lever. The lever, also, may be combined with the screw, but not conveniently with pullies, or with the wedge. The wheel and axle is combined with great advantage with pullies. The screw is not well combined with pullies; but the perpetual screw, combined with the wheel, is very serviceable. The wedge cannot be combined with any other mechanical power, and it only performs its effect by percussion; but this force of percussion may be increased by engines.

Pullies may be combined with pullies, and wheels with wheels; therefore, if any single wheel would be too large, and take up too much room, it may be divided into two or three more wheels and trundles, or wheels and pinions, as in clock-work, so as to have the same power, and perform the same effect.

In wheels with teeth, the number of teeth that play together in two wheels ought to be prime to each other, that the same teeth may not meet at every revolution. For, when different teeth meet, they by degrees wear themselves into a proper figure; therefore they should be contrived that the same teeth meet as seldom as possible.

8. The strength of every part of the machine ought to be made proportional to the stress it is to bear; and, therefore, let every lever be made so much stronger, as its length and the weight it is to support is greater. And let its strength diminish proportionally from the fulcrum, or point, where the greatest stress is, to each end. The axles of wheels and pullies must be so much stronger, as they are to bear greater weight. The teeth of wheels, and the wheels themselves, which act with greater force, must be proportionally stronger; and in any combination of wheels and axles, make their strength diminish gradually from the weight to the power, so that the strength of every part be reciprocally as the velocity it has. The strength of ropes must be according to their tension, and that is as the squares of their diameters. And, in general, whatever parts a machine is composed of, the strength of every particular part of it must be adjusted to the stress upon it. Therefore, in square beams, the cubes of the diameters must be made proportional to the stress they bear. And let no part be stronger or bigger than is necessary for the stress upon it; not only for the ease and well-going of the machine, but for the diminishing the friction. For all superfluous matter, in any part of it, is nothing but a dead weight upon the machine, and serves for nothing but to clog its motion. And he is by no means a perfect mechanic, that does not only adjust the strength to the stress, but also contrive all the parts to last equally well, that the whole machine may fail together.

9. To avoid friction as much as possible, the machine ought not to have any unnecessary motions, or useless parts; for a multiplicity of parts, by their weight and motion, increase the friction. The diameter of the wheels and pullies ought to be large, and the diameters of the arbors or spindles they run on as small as can be consistent with their strength. All ropes and cords must be as pliable as possible, and for that end are rubbed with tar or grease; the teeth of wheels must be made to fit and fill up the openings, and cut in the form of epicycloids. All the axles, where the motion is, and all teeth where they work, and all parts that, in working, rub upon one another, must be made smooth; and, when the machine goes, must be oiled or greased. If a joint is to go pretty stiff and steady, rub a little grease upon it.

The axis *a* (fig. 1) of a wheel may have its friction diminished, by causing it to run on two rollers, B C, turning round with it, upon two centres.

Likewise, instead of the teeth of wheels, one may place little wheels, as A B, (fig. 2,) running upon an axis in its centre. And this will take away almost all the friction of the teeth. And, in lanterns or trundles, the rounds may be made to turn about, instead of being fixed.

In all machines with wheels, the axles or spindles ought not to shake, which they will do if they be too short; and their ends ought just to fill their holes.

When the teeth of a wheel are much worn away, it makes that wheel move irregularly about, increases the friction, and requires more force, and may cause the teeth of two wheels to run foul upon one another, and to stop their motion, and endanger breaking the teeth. To prevent this, proper care should be taken to dress the teeth, and keep them to their proper figure.

10. When any motion is to be long continued, contrive the power to move or act always one way, if it can be done. For this is better and easier performed than when the motion is interrupted, and the power is forced to move, first one way and then another, because every new change of motion requires a new additional force to effect it. Besides, a body in motion cannot suddenly receive a contrary motion, without great violence: and the moving any part of the machine contrary ways by turns, with sudden jerks, tends only to shake the machine to pieces.

11. In a machine that moves always one way, endeavor to have the motion uniform.

12. But when the nature of the thing requires that a motion is to be suddenly communicated to a body, or suddenly stopped, to prevent any damage or violence to the engine by a sudden jolt, let the force act against some spring, or beam of wood, which may supply the place of a spring.

13. In regard to the size of the machine, let it be made as large as it can conveniently. The greater the machine, the exacter it will work, and perform all its motions the better. For there will always be some errors in the making, as well as in the materials, and, consequently, in the working of the machine. The resistance of the medium in some machines has a sensible effect. But all these mechanical errors bear a less proportion to the motion of the machine in great machines than in little ones, being nearly reciprocally as their diameters, supposing they are made of the same matter, and with the same accuracy, and are equally well finished. Therefore, in a small machine, they are more sensible, but in a great one almost vanish. Therefore, great machines will answer better than smaller, in all respects except in strength; for the greater the machine the weaker it is, and less able to resist any violence.

14. For engines that go by water, it is necessary to measure the velocity and force of the water. To get the velocity, drop in pieces of sticks, &c., and observe how far they are carried in a second, or any given time.

But if it flow through a hole in a reservoir, or standing receptacle of water, the velocity will be found from the depth of the hole below the surface.

Thus, let $s = 16\frac{1}{12}$ feet, $v =$ velocity of the fluid per second. B = the area of the hole. H = height of the water; all in feet. Then the velocity $v = \sqrt{2sH}$; and its force = the weight of the quantity $\frac{vv}{2s}$ B or HB of water, or $= \frac{62\frac{1}{2}}{112}$ HB hundred weight; because a cubic foot is = $62\frac{1}{2}$ lbs. avoirdupois. Also, a hogshead is about $8\frac{1}{2}$ feet, or 531 lbs. and a tun is four hogsheads.

When you have but a small quantity of water, you must contrive it to fall as high as you can, to have the greater velocity, and, consequently, more force upon the engine.

15. If water is to be conveyed through pipes to a great distance, and the descent be but small, so much larger pipes must be used, because the water will come slow. And these pipes ought not to be made straighter in some places than others; for the quantity of water conveyed through them depends upon the bigness of the bore at the straightest place.

Pipes of conduct coming directly from an engine, should be made of iron, with flanches at the ends to screw them together, with lead between, or else of wood; for lead pipes will bulge out at every stroke of the engine, and burst; but pipes next a jet must be lead. Pipes should not turn off at an angle, but gradually in a curve; pipes of elm will last twenty or thirty years in the ground; but they must be laid so deep that the frost may not reach them, or else the water must be let out, otherwise the frost will split them.

The thickness of any pipe must be as the diameter of the bore, and also as the depth from the spring. For a lead pipe of 6 inches bore, and 60 or 70 feet high, the thickness must be half an inch; and in wooden pipes, 2 inches.

Water should not be driven through pipes faster than four feet per second, by reason of the friction of the tubes. Nor should it be much wire-drawn, that is, squeezed through smaller pipes; for that creates a resistance, as the water-way is less in narrow pipes.

And in pump work, where water is conveyed through pipes to higher places, the bores of the pipes should not be made too straight upwards, for the straighter they are near the top, the less water will be discharged; nor should the pipe that brings the water into the pump be too straight, for the same reason. The wider these are, the easier the pump works.

When pipes are wind bound, that is, when air is lodged in them that the water can hardly pass, it must be discharged thus: Going from the spring till you come to the first rising of the ground, dig it open till the pipe be laid bare; then, with a nail driven into it at the highest part, or rather a little beyond, make a hole in the top, and all the air will blow out at the hole, and when the water comes, batter up the hole again. Do the same at every eminence, and all the air will be discharged. If the water runs fast through the pipes, the air will be beyond the eminence; but stopping the water, the air will ascend to the highest part. If air be driven in, at first, along with the water, the nail-hole must be left open, or a cock placed there to open occasionally. Sometimes a small leaden pipe is placed over the other, communicating with it in several places, in which is a cock at top, to open upon occasion.

16. When any work is to be performed by a water-wheel moved by the water running under it, and striking the paddles or laddle boards, (fig. 3,) the channel it moves in ought to be something wider than the hole of the adjutage, and so close to the floats on every side, as to let little or no water pass; and when past the wheel, to open a little, that the water may spread. It is of no advantage to have a great number of floats or paddles, for those past the perpendicular are resisted by the back water, and those before it are struck obliquely. The greatest effect that such a wheel can perform, in communicating any motion, is when the paddles of the wheel move with $\frac{1}{3}$ the velocity of the water; in which case, the force upon the paddles is $\frac{4}{9}$ only, supposing the absolute force of the water against the paddles, when the wheel stands still, to be 1. So that the utmost motion which the wheel can generate, is but $\frac{4}{27}$ of that which the force of the water against the paddles at rest would produce. This is when the wheel is at the best; but, oftentimes, far less is done.

Machines to raise water, when well made, seldom lose less than $\frac{1}{5}$ the computed quantity of water to be raised. The best contrived engine is scarce $\frac{1}{5}$ part better than the worst contrived engine, when they are equally well executed.

A man with the best water engine cannot raise above one hogshead of water in a minute, 10 feet high, to work all day.

17. When a weight is to be raised with a given corporeal power, by means of the wheel and axle, so that the weight may receive the greatest motion possible in a given time, the radius of the wheel and axle, and the weight to be raised, ought to be so adjusted, that the radius of the axle (EF): (fig. 4) may be to the radius of the wheel (AB) : : as $\frac{2}{3}$ the power (P) : to the weight to be raised (W) : or, which comes to the same thing, the velocity gained by the power in descending must be $\frac{2}{3}$ of the velocity which would be gained by gravity in the same time.

This only holds good when the power is a heavy body, as well as the weight; but does not take place when the power is some immaterial active force, such as that of an elastic medium, the strength of a spring, &c., whose weight is inconsiderable.

18. *These principles, also, are very useful and necessary to be known, where water-works are concerned.*

The pressure of the atmosphere upon a square inch is 14.7 lbs. *avoird.* at a medium.

The weight of a column of water, equal to the weight of the atmosphere, is 11¼ *yards.*

A cubic foot of water weighs 62½ lbs. *avoir.* and contains 6.128 *ale gallons.*

An ale gallon of water contains 282 *inches,* and weighs 10.2 lbs. *avoird.*

A tun of water, ale measure, weighs 1.1 *tun avoird.*, at 63 gallons the hogshead.

A cylinder of water a yard high, and *d* inches in diameter, contains $\frac{1}{10}$ *dd ale gallons,* and weighs $\frac{1}{12}$ *dd pounds avoird.*

Statistics of Connecticut.—The following article, from the Hartford Times, shows that the people of Connecticut must have pretty easy times. This freedom from taxation does not however always increase that patriotism which leads the people to take a deep interest in the affairs of their government.

Through the attention of the comptroller of public accounts, we have been furnished with the following highly interesting statistics. It would be both gratifying and useful, would some one or more individuals in each state furnish similar tables. There certainly can be no great difficulty in obtaining them, and the labor that they might cost would be more than compensated by the information they would afford.

Statistics of Connecticut for the year 1832.

The following is a brief abstract of the various subjects of taxation, as returned by the assessors, for March, 1832:

45,852	dwelling houses, valued	$21,948,740
2,622,676	acres of land	50,782,455
1,572	mills	848,511
1,826	stores	146,784
283	distilleries	54,052
1,521	manufactories	1,637,149
25	quarries	38,350
183	fisheries	98,625
1	ferry	200
34,250	horses, &c.	1,290,694
237,989	neat cattle	3,347,667
271,625	sheep	333,657
	Silver plate	10,614
5,196	riding carriages	238,797
22,893	clocks and watches	174,843
	Bank stocks, state banks	3,143,736
	Do. United States Bank	17,880
	Insurance stock	53,642
	Turnpike do.	157,362
	Money at interest	2,087,976
	Three folds	17,679
	Assessments	147,683
	Polls	689,315
		$88,592,388

Of receipts and disbursements.

There was received at the treasury during the year ending the 31st of March, 1833—

Viz. From interest on U. S. three per cents.	$1,382	
Tax on non-resident owners of bank stock	2,817	
Avails of State Prison	5,000	
Dividend of bank stock owned by the state	25,670	
Fines and miscellaneous receipts	7,448	
State tax	37,984	
		80,302

The disbursements were—

Viz. For ordinary expenses of government	60,852	
For public buildings and institutions	10,774	
		71,626

Of the expenses of government.

The population of the state by the last census was 297,711, and the ordinary expense of the government was $60,852; being a proportionate expense of twenty cents and a half for each inhabitant. But the state, during this time, received $28,053 interest on her three per cent. stock and dividends on bank stock; $12,446 from the state prison, forfeitures, fines, &c. and $2,817 for taxes on bank stock owned by non-residents; all amounting to $42,316; which being deducted from the ordinary expenses of government, left the sum of $18,536 to be paid from direct taxes.

This balance of $18,536 would require a contribution by each inhabitant of the state of less than six cents and three mills, and a tax less than three tenths of a mill on each dollar of valuation and assessment returned by the assessor.

Of the School Fund.

The whole capital of this fund, productive and unproductive, was reported by the commissioner in 1832, to be $1,902,957 87. The interest arising from it is irrevocably dedicated by the constitution to the support of primary schools, and by law is apportioned to them, according to the ratio of persons between four and sixteen years of age belonging to the respective school societies. The whole number of those persons in 1832 was 86,252; and the amount of interest distributed for that year was $81,939 40, being ninety-five cents for each of those persons, and equal to 28 cents for every inhabitant. Thus, while the state was distributing for the benefit of schools a sum equal to 28 cents for each person in it, the ordinary expenses of the government required of them only a ratio of contribution less than 6 cents and 3 mills.

Lime necessary for Wheat.—It is an opinion very generally acquiesced in, that wheat will not succeed on lands that are entirely destitute of this earth. In most agricultural districts that are not calcareous, a small quantity of lime is in various ways carried upon the soil by bones, shells, emptyings of white-wash tubs, &c. Those farmers who use leached ashes, lime their soil with the lime in the ashes. We give the following from "*Anderson's Recreations,*" a work highly esteemed in Europe:

"I had a field of good arable land, a mellow loam in Aberdeenshire, which had been long in culture, often dressed with animal and vegetable manures, and was of course endowed with a considerable degree of fertility; but being full of weeds, it was subjected to a thorough summer fallow in order to get rid of these, and bring it to a proper tilth in other respects; and as lime is found to be an active manure in that district, it had a moderate dressing of lime put upon it, and some dung at the same time. The whole field was sown with wheat at the proper season, which sprang up equally thick on every part of it. For some time no difference was perceivable in the appearance of the crop over the whole; by and by it was observed that the wheat on a small portion of the field, which by accident had no lime put upon it, became pale and sickly. While the crop in other parts of the field advanced luxuriantly, it dwindled in this particular patch more and more, till towards the beginning of May the whole had died quite out, and not one stalk of wheat was to be found upon it, though the weeds in consequence of the richness of the soil at that time grew there with extreme luxuriance. Perhaps the proportion of calcareous matter did not in this case amount to more than one-thousandth part of the whole, yet the qualities of this soil were thereby totally altered, inasmuch that though before the application of that dressing the soil was incapable of producing wheat at all, it was found at all times after that period well adapted for the raising of that crop. Nature had formed many soils with a similar proportion of calcareous matter, blended imperceptibly in them over large districts of land.

Notes on Mildew, from a Lecture on that Subject, by Professor Lindley, delivered at the Horticultural Society's Meeting Room, on the 24th of April. By J. W. L. [From Loudon's Gardener's Magazine.]

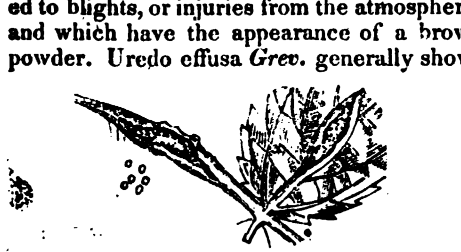
Dr. Lindley began by stating that he did not intend, on the present occasion, to give a regular series of lectures, as that plan required his hearers to attend the whole course, which very few individuals had leisure to do. He, therefore, now proposed to take a different subject for every lecture, and to make each complete in itself. His first subject was mildew.

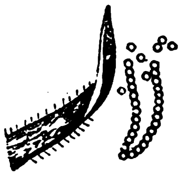
Every horticulturist has heard of mildew; and, though it is often confounded with blight, honey-dew, &c., the destructive fungi which constitute the real mildew, and the ravages they occasion, are unfortunately but too familiar to every one accustomed to either a garden or a field. Notwithstanding this, even the most eminent horticulturists know comparatively little either of the nature of this pest, or of its cure. One most important error exists respecting it, and this is the belief, common among gardeners and agriculturists, that one kind of mildew will infect several kinds of plants: but this can never be the case; each tribe of plants has a mildew peculiar to itself, which cannot, under any circumstances, affect plants of a different kind.

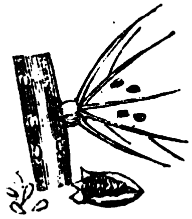
Mildew generally appears on the leaves or stems of plants in the form of red, white, or black spots, as a number of minute projections, as a frosty incrustation, or as a brownish powder; in every case spreading, more or less rapidly, according to its kind, and in its progress withering the leaves, destroying the fruit, and, finally, killing the plant. The popular reasons assigned for this pest are various; it has been ascribed to insects, fog, and even, in one agricultural report, to the inflammation of the oxygen gas in the air towards the end of summer, which scorched the leaves. These opinions have, however, been all proved to be erroneous. Mildew is nothing more than different kinds of fungi, or parasites, attacking different kinds of plants, and varying in appearance and species according to the nature of the plants which they attack. It is the greatest enemy to the agriculturist, but the gardener also suffers from it severely.

The fungi, commonly called mildew, are divided into three classes: 1. Those which grow, or rather lie, on the surface of leaves, and which, perhaps, do not derive any nutriment from the plant; 2. Those which are formed in the interior of the stem or leaf, and protrude themselves from it when ripe; and, 3. Those which only attack the roots. All are extremely simple in their organization, and very minute in their forms; they seldom appear but in autumn, except in forcing-houses.

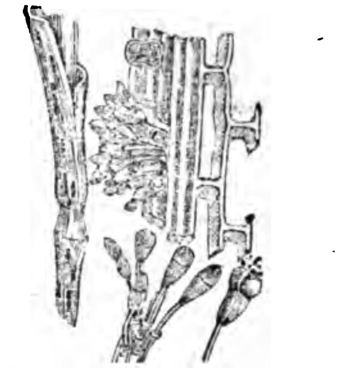
The first class, or mildew composed of those fungi that live on the surface of leaves, injure a plant by preventing its respiration, but do not appear to draw any nourishment from it. One of the most common of the fungi which attack the common cabbage is Cylindrosporium concentricum *Grev.* These very destructive fungi have the appearance of small white patches, or specks, of frosty incrustation, which, when magnified, are found to consist of a number of small cylinders, lying end to end, or across each other. These cylinders are all filled with seed, and burst when it is ripe, scattering it in every direction; wherever it falls upon the leaf it takes root, and thus the fungus spreads rapidly. The superficial mildew which attacks rose trees and many other flowering shrubs is a kind of Uredo. This name, derived from *uro*, Lat., to burn or scorch, is applied to those occasional discolorations of the surfaces of plants which were formerly attributed to blights, or injuries from the atmosphere, and which have the appearance of a brown powder. Uredo effusa *Grev.* generally shows itself on the under sides of the leaves of the **Rosaceæ**, and spreads rapidly. Uredo Rosæ *Pers.* is another kind, which also attacks rose trees. The fungus called Acrosporium monilioides consists of a number of globules, attached to each other, which, when magnified, appear like the beads of a necklace, and in many cases are found standing upright. When ripe, these globules fall, and, taking root, form fresh strings, or necklaces, like the first. Sometimes little tufts of these globules appear fixed to stalks; and, from some fancied resemblance to the brushes used for sprinkling holy water, are called Aspergillus. The superficial mildew which infects the onion, and is very fatal to that plant, is called Botrytis. Its name signifies a bunch of grapes; and it is thus called from a fancied resemblance between that fruit and its clusters of little globular seeds and seed-vessels. The bean and pea have a superficial mildew, (Uredo Fabæ *Pers.*) which spreads along their leaves, like white roots curiously interlaced. From these roots spring a number of branch-like shoots, each bearing a ball-like head, or brown berry, which, when ripe, bursts, and discharges seed.

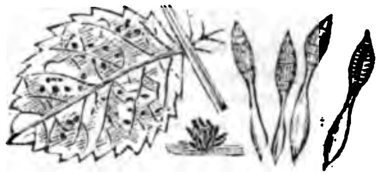






The second class of fungi, viz. those which spring from the interior of leaves, and stems, are by far the most fatal. These fungi generally appear in a sort of bag, or case, which is supposed to be formed of the cuticle of the affected leaf. The oak is attacked by a species of fungus, Æcidium, different varieties of which are found on many kinds of forest trees. The Æcidium Pini, found on pine trees, has, when magnified, the appearance of a number of nine-pins. When ripe, the cuticle which covers the fungus bursts, and emits a powder of a bright orange color, which is the seed. A mildew of this kind, which infects corn, is highly injurious to the farmer. It is vulgarly called the pepper brand; and, when corn is attacked by it, it gradually consumes the substance of the grain, leaving in its stead only a dark powder, which has a very offensive smell. This fungus is found only on barley, and in this respect differs from the Uredo Segetum, or smut, which is destructive not only of barley, but also of wheat and oats. The Uredo Segetum, or smut, has been the subject of many interesting experiments by Mr. Bauer, of Kew, whose discoveries will, no doubt, throw very considerable light upon the subject. It not only destroys the grain, which it converts into a kind of jelly, but it attacks the leaves and stems, always forming in the interior of the plant, and bursting forth when ripe. Corn is also attacked by a species of Puccinia, a very fatal kind of fungus, which always appears divided into cells. Puccinia Graminis, which attacks corn, forms in the interior of the stalk, and, when ripe, bursts forth in clusters, like bunches of grapes, of a dark brown color. Puccinia Rosæ *Grev.* appears on the leaves of rose trees, in little brown tufts, which, when opened and magnified, are found divided into extremely minute cells. A correspondent of this magazine mentions that his celery was infected with ferruginous spots, occasioned, no doubt, by the Puccinia Heraclei Grev.; and another correspondent, Mr. Robert Errington, gives a detailed account of the manner in which his celery was attacked by the same disease, and of the means which he adopted for its cure. He describes his celery as having the appearance of having been scorched by fire. He says he dug up the infected plants, and buried them, but this only seemed to increase the evil; and he tried several other remedies, but without any permanent success.





[*To be continued.*]

Canal Tolls.—It is very gratifying to find our flourishing state making such handsome monthly summings up, as the following, from the Albany Argus.

The canal tolls received in the month of July amount to the sum of $147,899—exceeding, by $42,282 02, the sum collected in the corresponding month last year. The following is a comparison of the tolls for July on all the canals of the state, for 1832 and 1833, to wit:

Canal.	1833.	1832.	Increase since 1832.
Erie,........	$125,488 04	$91,747 57	$33,740 47
Champlain,.......	17,293 94	11,112 23	6,181 71
Cayuga & Seneca,	2,084 63	1,890 03	194 60
Oswego,.........	3,032 72	1,867 48	2,165 24
	$147,899 33	$106,617 31	$42,282 02

The receipts for tolls to the close of July are greater, by *one hundred thousand five hundred and twenty-two dollars and ninety-eight cents*, than they were for the same period last year. Some estimate of the great increase of business upon the canals may be formed from the fact, that the diminution in the rates of toll, operating upon the articles which were transported upon the canals in 1832, would probably diminish the aggregate amount of tolls $150,000, for the whole season. At the diminished rates of toll, such has been the increase of articles transported, that in three months and eight days the aggregate amount exceeds that of the corresponding months of last year, by the sum of more than *one hundred thousand dollars*.

NEW-YORK AMERICAN.

AUGUST 31, SEPTEMBER 2, 3, 4, 5, 6—1833.

LITERARY NOTICES.

ON THE IMPROVEMENT OF SOCIETY BY THE DIFFUSION OF USEFUL KNOWLEDGE, &c. &c., by THOMAS DICK, LL. D.—forming Vol. LIX. of *Harpers' Family Library*, New-York.—In the preface to this book we learn that it was prepared for the press nearly twenty years ago, but that other literary undertakings of the author prevented its appearance then. If it had been published at that time—anterior, as it was in a great degree, to the various admirable works which, in every department of knowledge, and adapted to all understandings, are now daily put forth under the impulse of an enlightened and generous zeal for the diffusion of knowledge—it would have been pronounced, we do not hesitate to say, one of the most original as well as valuable and attractive volumes ever written. As it is, losing only in part the claim of originality, it retains its value and usefulness undiminished. All the improvements and discoveries in modern science, which could serve as illustrations of the main design, have been embodied in the work as it now appears, and we cordially recommend it to all readers. It is written in so good a style, the topics, even when bordering on abstruse science, are treated so clearly, and in such popular language—avoiding always the use of merely technical terms—as to be quite intelligible to every one of ordinary understanding.

Knowledge in this country—we cannot help repeating it again and again—is not only important for the immediate advantages in confers upon its possessor—but for the indirect but omnipotent influence which it must exercise upon our free institutions.—These repose, and must, in the nature of things, repose, for their stability and purity, upon the knowledge and virtue, (which, as a general proposition, may be said always to go hand in hand), of the people. An educated people cannot be enslaved. But not only does knowledge tend to preserve freedom, but to embellish it. It strips it at once of the connection, which its enemies so willingly impute to it, with vulgar license, jacobinism, sans-culotteism. It compels those who would obtain influence among the people to respect themselves. It cuts short the ascendancy of demagogues, who, with the praises of the people always on their lips, insult them on all agitating questions, by one sided appeals to their passions, and partial and distorted statements of the truth. Hence, we say again, that in free America, more even than elsewhere, is the universal diffusion of knowledge to be aimed at by all lovers of their country. Would that the means and mode of effecting this great object, were as obvious as its importance. But these will be found—it cannot be doubted—whenever the public mind shall be resolutely turned to the subject. Meanwhile we observe with pleasure that *Dr. Dick* promises a volume upon this very topic—*the means of diffusing useful knowledge among all classes*. We shall look eagerly for it.

We present some extracts. First, we have this picture of a man living in the world without seeking to understand aught that is passing around him:

His views are chiefly confined to the objects immediately around him, and to the daily avocations in which he is employed. His knowledge of society is circumscribed within the limits of his parish, and his views of the world in which he dwells are confined within the range of the country in which he resides, or of the blue hills which skirt his horizon. Of the aspects of the globe in other countries—of the various tribes with which they are peopled—of the seas and rivers, continents and islands which diversify the landscape of the earth—of the numerous orders of animated beings which people the ocean, the atmosphere, and the land,—of the revolutions of nations, and the events which have taken place in the history of the world; he has almost as little conception as the animals that range the forest, or bound through the lawns. In regard to the boundless regions that lie beyond him in the firmament, and the bodies that roll there in magnificent grandeur, he has the most confused and inaccurate ideas; and he seldom troubles himself with inquiries in relation to such subjects. Whether the stars be great or small, whether they be near us or at a distance, or whether they move or stand still, is to him a matter of trivial importance. If the sun give him light by day, and the moon by night, and the clouds distil their watery treasures upon his parched fields, he is contented, and leaves all such inquiries and investigations to those who have little else to engage their attention. He views the canopy of heaven as merely a ceiling to our earthly habitation, and the starry orbs as only so many luminous studs or tapers to diversify its aspect, and to afford a glimmering light to the benighted traveller. Of the discoveries which have been made in the physical sciences in ages past, of the wonders of creation which they have unfolded to view, of the instruments which have been invented for exploring the universe, and of the improvements which are now going forward in every department of science and art, and the prospects they are opening to our view, he is almost as entirely ignorant as if he had been fixed under the frozen pole, or chained to the surface of a distant planet. He considers learning as consisting chiefly in the knowledge of grammar, Greek and Latin; and philosophy and astronomy as the arts of telling fortunes and predicting the state of the weather; and experimental chymistry, as allied to the arts of magic and necromancy. He has no idea of the manner in which the understanding may be enlightened and expanded, he has no relish for intellectual pursuits, and no conception of the pleasures they afford; and he sets no value on knowledge but in so far as it may tend to increase his riches and his sensual gratifications. He has no desire for making improvements in his trade or domestic arrangements, and gives no countenance to those useful inventions and public improvements which are devised by others. He sets himself against evey innovation, whether religious, political, mechanical, or agricultural, and is determined to abide by the "good old customs" of his forefathers, however irrational or absurd. Were it dependent upon him, the moral world would stand still, as the material world was supposed to do in former times; all useful inventions and improvements would cease, existing evils would never be remedied, ignorance and superstition would universally prevail, the human mind would be arrested in its progress to perfection, and man would never arrive at the true dignity of his intellectual nature.

Contrasted with this is the following fine description of the resources and employments of that mind which seeks to fulfil its high destinies by questioning the Universe.

Sitting at his fireside, during the blasts of winter, he can survey the numerous tribes of mankind scattered over the various climates of the earth, and entertain himself with views of their manners, customs, religion, laws, trade, manufactures, marriage ceremonies, civil and ecclesiastical governments, arts, sciences, cities, towns, and villages, and the animals peculiar to every region. In his rural walks he can not only appreciate the beneficence of Nature, and the beauties and harmonies of the vegetable kingdom, in their exterior aspect, but can also penetrate in the hidden processes which are going on in the roots, trunks, and leaves of plants and flowers, and contemplate the numerous vessels through which the sap is flowing from their roots through the trunks and branches, the millions of pores through which their odoriferous effluvia exhale, their fine and delicate texture, their microscopical beauties, their orders, genera, and species, and their uses in the economy of nature.

With the help of his microscope, he can enter into a world unknown to the ignorant, and altogether invisible to the unassisted eye. In every plant and flower which adorn thes field, in every leaf of the forest, in the seeds, prickles, and down of all vegetables, he perceives beauties and harmonies, and exquisite contrivances, of which, without this instrument, he could have formed no conception. In every scale of a haddock he perceives a beautiful piece of net-work, admirably contrived and arranged, and in the scale of a sole a still more diversified structure, which no art could imitate, terminated with pointed spikes, and formed with admirable regularity. Where nothing but a speck of *mouldiness* appears to the naked eye, he beholds *a forest of mushrooms* with long stalks, and with leaves and blossoms distinctly visible. In the eyes of a common fly, where others can see only too small protuberances, he perceives several thousands of beautiful transparent globes, excellently rounded and polished, placed with the utmost regularity in rows, crossing each other like a kind of lattice-work, and forming the most admirable piece of mechanism which the eye can contemplate. The small dust that covers the wings of moths and butterflies he perceives to consist of an infinite multitude of feathers of various forms, not much unlike the feathers of birds, and adorned with the most bright and vivid colors. In an animal so small that the naked eye can scarcely distinguish it as a visible point, he perceives a head, mouth, eyes, legs, joints, bristles, hair, and other animal parts and functions, as nicely formed and adjusted, and endowed with as much vivacity, agility, and intelligence, as the larger animals. In the tail of a small fish, or the foot of a frog, he can perceive the variegated branchings of the veins and arteries, and the blood circulating through them with amazing velocity. In a drop of stagnant water he perceives thousands of living beings, of various shapes and sizes, beautifully formed, and swimming with wanton vivacity like fishes in the midst of the ocean. In short, by this instrument he perceives that the whole earth is full of animation, and that there is not a single tree, plant, or flower, and scarcely a drop of water, that is not teeming with life, and peopled with its peculiar inhabitants. He thus enters, as it were, into a new world, invisible to other eyes, where every object in the animal, vegetable, and mineral kingdoms presents a new and interesting aspect, and unfolds beauties, harmonies, contrasts, and exquisite contrivances, altogether inconceivable by the ignorant and unreflecting mind.

In the invisible atmosphere which surrounds him, where other minds discern nothing but an immense blank, he beholds an assemblage of wonders, and a striking scene of Divine Wisdom and Omnipotence. He views this invisible agent not only as a *material* but as a *compound* substance—compounded of two opposite principles, the one the source of flame and animal life, and the other destructive to both, and producing by their different combinations, the most diversified and beneficent effects. He perceives the atmosphere, as the agent under the Almighty, which produces the germination and growth of plants, and all the beauties of the vegetable creation—which preserves water in a liquid state—supports fire and flame, and produces animal heat, which sustains the clouds, and gives buoyancy to the feathered tribes—which is the cause of winds—the vehicle of smells—the medium of sounds—the source of all the pleasures we derive from the harmonies of music—the cause of that universal light and splendour which is diffused around us, and of the advantages we derive from the morning and evening twilight. In short, he contemplates it as the prime mover in a variety of machines,—as impelling ships across the ocean, blowing our furnaces, grinding our corn, raising water from the deepest pits, extinguishing fires, setting power-looms in motion, propelling steamboats along rivers and canals, raising balloons to the region of the clouds, and performing a thousand other benificent agencies without which our globe would cease to be a habitable world. All which views and contemplations have an evident tendency to enlarge the capacity of the mind, to stimulate its faculties, and to produce rational enjoyment.

Again,—the man of knowledge, even when shrouded in darkness, and in solitude, where other minds could find no enjoyment, can entertain himself with the most sublime contemplations. He can trace the huge globe on which we stand flying through the depths of space, carrying along with its vast population, at the rate of sixty thousand miles every hour, and, by the inclination of its axis, bringing about the alternate succession of summer and winter, spring and harvest. By the aid of his telescope he can transport himself towards the moon, and survey the circular plains, the deep caverns, the conical hills, the lofty peaks, the shadows of the hills and vales, and the rugged and romantic mountain scenery which diversify the surface of this orb of night. By the help of the same instrument he can range through the planetary system, wing his way through the regions of space along with the swiftest orbs, and trace many of the physical aspects and revolutions which have a relation to distant worlds. He can transport himself to the planet Saturn, and behold a stupendous ring, 600,000 miles in circumference, revolving in majestic grandeur every ten hours around a globe nine hundred times larger than the earth, while seven moons, larger than ours, along with an innumerable host of stars, display their radiance, to adorn the firmament of that magnificent world. He can wing his flight to the still more distant regions of the universe, leaving the sun and all his planets behind him, till they appear like a scarcely discernible speck in creation, and contemplate thousands and millions of stars and starry systems, beyond the range of the unassisted eye, and wander among suns and worlds dispersed throughout the boundless dimensions of space. He can fill up, in his imagination, those blanks which astronomy has never directly explored, and conceive thousands of systems and ten thousands of worlds, beyond all that is visible by the optic tube, stretching out to infinity on every hand,—new creations incessantly starting into existence—peopled with intelligences of various orders, and all under the superintendence and government of the "King Eternal; Immortal, and Invisible," whose power is omnipotent, and the limits of his dominions past finding out.

It is evident that a mind capable of such excursions and contemplations as I have now supposed, must experience enjoyments infinitely superior to those of the individual whose soul is enveloped in intellectual darkness.

THE AMERICAN COAST PILOT, *12th Edition*, by **EDMUND M. BLUNT**.—For nearly forty years a single individual, unaided, if not indeed repulsed and checked by that department of the general government most interested in the success of his labors, has carried on with constant improvements in each successive edition, the useful, elaborate, and expensive publication, named at the head of this notice. At the end of this period, with a constitution broken by exposure and fatigue, and with a fortune, as he himself expresses it, "literally cast upon the waters," Mr. Edmund M. Blunt retires from the superintendence of the work. In doing so, he expresses his warm acknowledgments to our shipmasters and others, whose "march is on the mountain wave," for their encouragement of him. He enumerates also officers in the British, French, Spanish. Danish and Dutch service, from whom he has received valuable and important information, most handsomely furnished; but from the Navy Department of the United States, to which, of all others, he had a right to look for aid and countenance, he received neither. This Mr. Blunt does not state; but surprised to find no allusion to that department in the course of his general acknowledgments in so many quarters, we asked an explanation, and it was as we state.—The publication will be continued as heretofore by the very capable sons of Mr. Blunt, who are emulating their father's skill and accuracy as Hydrographers.

MEMOIR OF ZERAH COLBURN, written by himself. *Springfield:* G. & C. MERRIAM.—This is the dull memoir of one, who, beginning as a prodigy, leaves off as a person of very ordinary understanding. We well remember the wonderful boy, and our own incredulity almost, even after witnessing the results of his instinctive calculations, of the possibility of ch things. But infant *Rosciuses*, and boy calcula- s, seem reserved for the same mediocrity in mid- life. It is however remarkable, we think, that pains taken in London and Paris, with Zerah burn's education, by persons who hoped to mature onderful gift into some useful development, and varied intercourse he had with the world, should left so little trace as this memoir indicates.— calculating boy is now, we believe, a worthy ister, and settled in Vermont, his native State.

HE AMERICAN MONTHLY MAGAZINE, Vol. II, No. r September.—We have observed this periodi. rom its commencement, and marked with increa. gratification the ability, taste, and excellent of its articles. Its aim obviously is to shine not to glitter; to impress its readers by the soli. and sterling value of its contents, more than by rficial brilliancy. There is a vein of true clas. literature running through its pages, which we ss recommends it very much to us; while it is ciently diversified with lighter reading to make erally acceptable.

ALES OF ROMANCE, first series, by Tho's Moore, S. C. Hall, Crofton Croker, C. Lamb, Miss rd, and others. *Philadelphia:* KEY & BIDDLE. his is a club book under a new title, wherein various talents are to display their differing attractions. Some of the tales in this volume, which is prettily printed, have before appeared in print, and are of thrilling interest. "The Spanish Headsman" was republished in this paper. It is quite a readable collection.

THE EDINBURGH REVIEW, No. CXVI, from which we extracted, some days ago, the article on Mr. Rush's book, has several very good papers. At present we only notice that on the narrative of *Silvio Pellico*, a young Italian of genius and letters, imprisoned for ten years by order of the Emperor of Austria, for some political offence, in Lombardy—in order to introduce the character drawn of that Emperor—who is nevertheless called by his Austrian subjects "the good Franz"—and the eloquent and glowing description of the influence upon a generous mind of such a narrative as Pellico's.

The minds of kings are often kept by those about them in a thraldom more degrading even than the fetters of Spielberg. We spoil them, and then blame them for being spoiled. It is the curse of greatness to be attended by slaves, who not only take their humor for a warrant, but who studiously fence them in from the discipline and emotions, in which every one else obtains his best security for virtue. When Pellico and Maroncelli were released, they passed through Vienna on their way to Italy. They were taken by the commissary of Police, who had them in charge, to the gardens at Schon brunn. The Emperor accidentally appeared. The loyal servant made them stand aside, lest his Imperial master should be saddened at the sight of their wasted persons! Have Metternich and the Aulic Chamber allowed him to be enlightened as well as saddened by the sight of these high minded and deeply affecting Memoirs? Does he know the merit, the goodness, the piety, of which he has been made the gaoler? Has he been enabled to measure the full extent of the barbarous injuries of which God will one day make himself the avenger? Are his dreams never haunted by the vision of the scholars and gentlemen of Italy, working in prison clothes in their Moravian dungeon,—bent down by chains under whose weight they are unable to walk, and the pressure of which will not let them sleep—sickening at the smell of food so uneatable that the famished cannot taste it—fainting under the indirect assassination of a sunless atmosphere, and a slow starvation—perishing from the heart's longings after friends to whom they may never write, after parents from whom and of whom they must never hear—supporting each other by manly and religious hopes against desperate temptations to self-destruction—the objects of silent and tremulous compassion to even the lowest ministers of abused justice,—to all, but to him, who alone had the power of relieving them?

The Emperor is one of those amiable sort of persons who pats children on the head when he meets them out a-walking, and who has established among his Austrian subjects a reputation for good-nature, which the ordinary kingcraft of generalized political ambition has not been thought sufficiently personal to belie. There is a stupid constitutional good-nature which is no more meritorious than the good-nature of a drunken man. The individual horrors of Spielberg are a different, and we fear a personal affair. The women of Vienna, who came round the carriages of Pellico and Maroncelli, told them to be of good cheer. 'Our Emperor is so good—he will 'never leave you long at Spielberg; we are sure 'our *Franz* will remember you.' If *Franz* did remember them at all, so much the worse for *Franz*. Politics are of course excluded from so ticklish a subject as the present volume, printed at the Turin press. There can be, however, only one impression left upon its readers; that is, that the Emperor does not want to read it to become acquainted with the worst part of its contents. The positiveness of the regulations by which the officers on the spot were frightened from the commonest acts of humanity, the constant reference to Vienna for the slightest mitigations which might be required by the necessities of a dying man,—such as permission to hear mass, or to have a leg cut off—special commissioners sent down to report upon the condition of the prison—occasional direct messages from the Emperor himself—all countenance the general belief that Spielberg was kept as a kind of State Menagerie which the Emperor personally superintended. If the Emperor has a heart, this is a book to break it. If he has a conscience, the best penance and reparation he now can make, is to throw open the prison doors of 'the Leads' of Venice (*di tanti che giaceamo!*) to set free as many of the hundred, as are still alive, whom Pellico left at San Michele; and to return the noble Confalonieri, Zucchi, and other Italian patriots, even now incarcerated at Spielberg, to their Italian home. It would redeem his character with the present and future ages, were he to consider further, how great is the presumption which disinterested martyrs raise in favor of their persecuted cause. Is there none to teach him that a government which once puts itself at issue with the rising intelligence and virtue of a nation stakes its temporary safety on a collision where victory is disgrace? Is there nobody who can elevate him high enough to feel that a land which is the mother of such spirits, must be worthy of a better fate?

It is so easy to be generous at the charge of others, that we all are patriots for former ages and in distant lands. While traversing the crisis of our Stuart-struggle, none is now so base, but that he finds himself in a jail with Hampden, pines away with Elliott in his prison chamber, and bows his neck upon the scaffold with Russell and with Sydney?—Had the sins of our fathers doomed us to be born in Italy, we often think what would have been our courage and our fate. Here, also, at least in imagination and feeling, we range ourselves, side by side, with her virtuous citizens, Steadfast to the cause of good government and of truth, we follow the men, who, looking forwards to the independence of their country, and to the happiness of future generations, dared boldly to put to hazard all on earth belonging to themselves. They failed! In the wanderings of their exile, in the living sepulchre of their dungeons, what can we do but feel as if we were reading our own story in the persons of better men? Instead of this beautiful world which God has given us—instead of useful duties, interchanged affections, an enlarging sphere of brightening prospects—all the love, the promise, and the poetry of life—to what a crisis have they been called! Every thing lost in one fatal moment. Were we to live a thousand years, we should enter a prison walls with very altered feelings from those of a mere spectator, since we have kept company with Pellico. We have mounted with him on his chair and table, to peer down from the lattice-bars on the dome of St. Mark, the glittering cupolas, and the Lagune. We have clung with him to the grated windows for a glimpse of nature, and for something to look like the smile of God, while dawn was breaking over the Valley of Brunn upon his silent prayers. We have brooded with him through ten long years of a solitude so intense, that the step of the turnkey was a pleasure, the whisper of a neighboring prisoner a blessing, and the sound of an Italian air from a distant dungeon, an event. We have shared in all the fluctuations of the hopes and fears—in the spectral terrors of his nights, in the day dreams of his family affections: we thrilled with him at his glimpse of Gioja, at his chance embrace of Oroboni, and above all, at his overflowing testimony to the nobleness with which human nature, when cold and forsaken in the hearts of kings and sycophants, yet vindicated its rights, in a thousand other bosoms, to our confidence and love Streams of moral lustre and heavenly charity broke in, and lightened the darkness most, where the monotony of selfishness, and the servile drudgery of a long acquaintance with, and ministry on the wretched, were most likely to have trodden out the germ of every tender feeling. The characters of the dumb boy, and of Maddalene at Malta, of Angiola at Venice, and of Schiller in Spielberg, belong to scenes, which, in honor of childhood, and of women, of the virtue which makes sentinels and turnkeys a thousand times nobler than the sovereigns whom they have the misfortune to represent, we pray never to forget.

SUMMARY.

Another packet ship bound to Natchez, (the Newark, Captain Brewer,) went to sea from this port on Thursday, with a cargo of merchandize valued at from 3 to 400.000 dollars. The St, Louis, which sailed on the 7th inst. for the same port, had a cargo of still greater value for that flourishing market.

[*From the Columbia Republican.*]

LIEUTENANT ALLEN'S MONUMENT.—This Monument, which is now completed, was erected by the citizens of Hudson to the memory of their late fellow citizen, Lt. Wm. H. Allen. It stands upon a commanding site at the northern extremity of the city cemetery. It is composed of a column of the Grecian Doric order elevated upon a pedestal and surmounted by a sepulchral urn. The pedestal is a square in its plan, placed upon an elevation of three steps and slightly tapering in a pyrimidal form as it rises, and terminates with a beautiful and bold capital—supporting a plinth from which rises the fluted column in all the beauty and grace of the classic architecture of ancient Greece. The whole is surmounted with a chaste and beautiful urn, and presents at once an object of simplicity and chastened elegance, alike honorable to the city and those engaged in its execution. It is built of the purest white marble, in a masterly style, by Mr. Cyrus Darling of this city, after a design by Mr. J. H. Dakin of New York. Its whole height is 20 feet. Upon the pannels of the pedestal the following words are inscribed:

To the memory of
William Howard Allen,
Lieutenant in the United States Navy,
who was killed in the act of boarding
a piratical vessel on the coast of
Cuba near Matanzas, on the
9th of November, 1822,
Æt. 32.
William Howard Allen,
His remains, first buried at Matanzas,
were removed to this city by the U. States
Government, and interred under the direction
of the Common Council of this city, beneath
this marble, erected to his honor by the
citizens of his native place.
1833.
William Howard Allen,
was born in the city of Hudson, July 8th, 1790,
appointed Midshipman in 1801,
and a Lieutenant in 1811;
Took a conspicuous part in the engagement
between the Argus and Pelican in 1813,
and was killed while in command of the
United States Schooner Alligator.
Pride of his country's banded chivalry,
His fame the hope, his name their battle cry;
He lived as Mothers wish their sons to live,
He died as Fathers wish their sons to die.

The President of the United States has recognized Paul Pierre Thomasson de Lamassee as Vice Consul of France at Savannah, Georgia, and Charles Knorre, Esq. as Vice Consul of the free city of Hamburgh, for the City of Boston, and the State of Massachusetts.

A public dinner, without distinction of party, was given to *Governor Marcy*, on Monday last, at *Buffalo*.

Macon, Georgia, August 23d.—The first bale of New Cotton received in this place this season, came in yesterday from the plantation of Mr John Harvey, in Houston County, and was purchased at auction by Messers. T. L. & J. P. Smith, at 20 1-2 cents.

This bale was on its way to Savannah, by Capt. Blair's Boat, in a few hours after the purchase.

We do not give the above as a fair quotation of the market price. But we can say to the planter, that if his cotton was now in market, the prices paid for it in Charleston would warrant from 14 to 15 cents here, at which price it is probable the market will open.

Rum and Razors.—A countryman sent to his friend in the city for a barrel of rum, for family use —and received, in addition to the rum, a case of razors—with this significant remark in a letter—"*One is slow and sure—the other quick and certain.*"—[Gazette.]

Shipwreck.—The brig Pearl, Davis, hence for Franklin, La. with a full cargo of merchandize, was driven ashore on Body's Island, North Carolina, in a violent gale, on the night of the 24th inst. We are informed by Mr. Birdsall, one of the passengers, who had returned to this city, that the vessel will probably be lost. A small part of the cargo will be saved in a damaged state. The cargo was principally insured in this city. Vessel owned in New Haven. Passengers and crew safe.—[Jour. Com.]

Hartford Con. Aug. 31.—The splendid new Steamboat, New England, Capt. Waterman, arrived at the wharf last evening, at about half past six o'clock, having performed this, her first trip from New York to this city in twelve hours and a half.—The New England is superior to any Boat that has ever appeared on the river, in size, convenience, elegance and speed.

Cincinnati, Aug. 22.—We learn by a gentleman who left Louisville on Tuesday, that the steamboats *Reindeer*, and *Volant*, were burnt, or had been burning for five hours, when he left there. We understand they were laying at Shippingport or Portland. How they took fire we have not learned.

Destructive Fire at Troy.—At 5 o'clock on Saturday evening, a fire broke out in South-street, in the sash and blind factory of Prescot & Smith, originating from the furnace of the engine, which, with the buildings occupied by Smith & Gilbert, were laid in ashes. The loss of P. & S. is estimated at 5000 dollars, on which the Troy Insurance Company had 1600. The loss of E. & G. 10,000 dollars, and 10,000 was insured, 5000 in the Rensselaer and Saratoga Company, and 5000 in the Albany Insurance Company.

About 11 o'clock on Sunday evening, another fire broke out in Franklin-square, in the stables in the rear of Dorlon's Washington Hall; and by 2 o'clock the four noble brick tenements on River-street, were laid in ruins. The wind at the time was a gale from the N. W. but by great exertions, the flames were arrested at Mr. E. A. Sherman's building, which, however, was considerably damaged. Dorlon's loss is estimated at about 5000 dollars—insurance 2500. The three other buildings owned by Townsend M'Coun, were insured. The occupants, Silliman, Grant & Co. grocers and lumber merchants, lost considerable property, but were partly insured. E. & W. Carpenter, dry goods merchants, were insured 10,000 dollars, which probably covers their loss. The fourth tenement was occupied by Jared G. Bacon, draper and tailor, on the first floor—and the upper part by Kelly, as a boarding house. The amount of Mr. Bacon's loss is nearly 3000 dollars, insurance 2000. Mr Kelly's furniture mostly destroyed, no insurance. The owners of property in the building where the fire was stayed, were Mr E. A. Sherman, Mr. W. P. Haskin, and Messrs. T. & R. Mann, all of whom were insured. The amount of property destroyed by this conflagration is estimated at 25,000. The fire is supposed to have been communicated by incendiaries.

Washington, Department of State,
31st Aug. 1833.

Notice is hereby given, that the Board of Commissioners appointed by the President to carry into effect the Convention between the United States and his Majesty, the King of the two Sicilies, concluded at Naples on the fourteenth day of October, one thousand eight hundred and thirty-two, will meet in this city on Wednesday, the eighteenth day of September next, agreeably to the provision of the 3d Section of the Act of Congress of the 2d of March, 1833, entitled "An Act to carry into effect the Convention between the United States and his Majesty, the King of the two Sicilies, concluded at Naples on the fourteenth day of October, one thousand eight hundred and thirty-two."

By the President of the United States of America.
A Proclamation.

Whereas, a Convention between the Government of the United States of America, and his Majesty, the King of the Kingdom of the two Sicilies, to terminate the reclamations of said government for the depredations inflicted upon American Commerce, by Murat, during the years 1809, 1810, 1811, and 1812, was concluded and signed at Naples, on the fourteenth day of October, in the year of our Lord one thousand eight hundred and thirty-two; which Convention is word for word as follows:

Convention between the Government of the United States of America and his Majesty the King of the Kingdom of the two Sicilies, to terminate the reclamations of said government, for the depredations inflicted upon American Commerce by Murat, during the years 1809, 1810, 1811, and 1812—

The Government of the United States of America, and His Majesty the King of the Kingdom of the two Sicilies, desiring to terminate the reclamations advanced by said Government against his said Majesty, in order that the merchants of the United States may be indemnified for the losses inflicted upon them by Murat, by the depredations, seizures, confiscations and destruction of their vessels and cargoes, during the years 1809, 1810, 1811 and 1812, and his Sicilian Majesty desiring thereby to strengthen with the said government of the United States and his aforesaid Majesty the King of the Kingdom of the two Sicilies, have, with one accord, resolved to come to an adjustment; to effectuate which they have respectively named and furnished with the necessary powers, viz. the said Government of the United States. John Nelson, Esquire, a citizen of the said States, and their Charge d'Affaires near His Majesty the King of the Kingdom of the two Sicilies; and His Majesty His Excellency D. Antonio Maria Statello Prince of Cassaro Marquis of Spaccaforno Count Statello, &c. &c. &c., His said Majesty's Minister Secretary of State for Foreign Affairs, &c. &c. who after the exchange of their respective full powers found in good and due form, have agreed to the following articles:—

Article 1st.—His Majesty the King of the Kingdom of the two Sicilies, with a view to satisfy the aforesaid reclamations for the depredations, sequestrations, confiscations, and destruction of the vessels and cargoes of the merchants of the United States, (and for every expense of every kind whatsoever incident to or growing out of the same) inflicted by Murat during the year 1809, 1810, 1811, and 1812, obliges himself to pay the sum of two millions one hundred and fifteen thousand Neapolitan ducats to the government of the United States; seven thousand six hundred and seventy-nine ducats, part thereof, to be applied to re-imburse the said Government for the expense incurred by it, in the transportation of American seamen from the Kingdom of Naples, during the year 1810, and the residue to be distributed amongst the claimants by the said Government of the United States in such manner, and according to such rules as it may prescribe.

Article 2d.—The sum of two millions one hundred and fifteen thousand Neapolitan ducats agreed on in article the 1st, shall be paid in Naples, in nine equal instalments of two hundred and thirty-five thousand ducats and with interest thereon, at the rate of four per centum per annum, to be calculated from the date of the interchange of the ratification of the Convention, until the whole sum shall be paid. The first instalment shall be payable twelve months after the exchange of the said ratifications, and the remaining instalments, with the interest, successively, one year after another. The said payments shall be made in Naples into the hands of such person as shall be duly authorized by the Government of the United States to receive the same.

Article 3d.—The present Convention shall be ratified, and the ratifications thereof shall be exchanged in this capital, in the space of eight months from this date, or sooner if possible.

In faith whereof the parties above named have respectively subscribed these articles, and thereunto affixed their seals.

Done at Naples on the fourteenth day of October, one thousand eight hundred and thirty two.

John Nelson. [l.s.]

And whereas the said Convention has been duly ratified on both parts, and the respective ratifications of the same were exchanged at Naples, on the eighth day of June, one thousand eight hundred and thirty-three, by Auguste Davezac, on the part of the United States, and the Prince of Cassaro on the part of the King of the kingdom of the two Sicilies.

Now therefore be it known, that I, Andrew Jackson, President of the United States, have caused the said Convention to be made public, to the end that the same and every clause and article thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In witness whereof I have hereunto set my hand, and caused the seal of the United States to be affixed.

Done at the City of Washington, this twenty-seventh day of August, in the year of our Lord, one thousand eight hundred and thirty-three, and of the Independence of the United States, the fifty-eighth.

{ L.S. }

Andrew Jackson.

By the President:
Louis McLane, Secretary of State.

Important Law.—We republish the following law. Its importance, however absurd it may be deemed—and we certainly so deem it ourselves—requires that as much publicity as possible should be given to it, as it goes into effect on the 29th of October next.

An act to prevent persons from transacting business under fictitious names—passed April 29, 1833.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

§ 1. No person shall hereafter transact busine in the name of a partner not interested in his fir and where the designation "and Company" or " Co." is used, it shall represent an actual partner partners.

§ 2. Any person offending against the provisi of this act, shall, upon conviction thereof, be deem guilty of a misdemeanor, and be punished by a fi not exceeding one thousand dollars.

§ 3. This act shall be published by the Secret of State immediately, and shall not take effect un six months after its passage.

State of New York, Secretary's Office.

This bill having been approved and signed by t Governor of this State on the 29th of April, 183 do hereby certify that the same became a law on t date.

John A. Dix, Secretary.

FOREIGN INTELLIGENCE.

The packet ship *United States*, from Liverpool, brings us London papers to and of the 7th ult. Lisbon fell into the hands of Donna Maria's troops on the 24th July, after a battle on the preceding day on the opposite side of the Tagus, between the troops of Don Miguel and those of Donna Maria, in which the former were worsted. The next day the *Duke de Cadoval* and the rest of Don Miguel's ministers having abandoned Lisbon, the populace rose and proclaimed Donna Maria. *Villa Flor's* troops crossed over the same afternoon. Admiral Napier and his fleet arrived on the 25th, and all was tranquil under the new rule. Oporto had resisted a fierce attack of Marshal Bourmont; and the question, if left to Portuguese decision alone, may be considered as settled in favor of *Donna Maria*. We see nothing but rumor as to any interference by Spain—and nothing authentic respecting the transporting of troops from England to Portugal, though the London Exchange was all in agitation on the 6th because the Admiralitv had advertised for *two transports of* 300 *tons each!*

The Spanish Ambassador at Lisbon, *Cordova*, was taken fighting with the Miguelites, and released unconditionally by the victors.

Miguel, it was surmised, would endeavour to escape to England. Other accounts are that he was off for Spain. At any rate he was non-apparent.

We give the following very characteristic extract of a letter from Mr. George Fitch, Lieutenant of the late schooner Eugenie, dated River Tagus, July 25:

"I write this on board what was formerly Don Miguel's yacht. I took her yesterday with this single arm and a musket and bayonet.

"A mob of 30 people released me from the infernal prison where I have been confined, with little food, for the last month. When I got into the street the people carried me on their shoulders, and wanted me to head them, which I did; their numbers were small, but I soon increased them by releasing all the prisoners. I then armed with broomsticks those who could get nothing better. I had myself a beautiful weapon, a crow-bar. We flew like fire, shouting 'Vive Donna Maria,' through the streets to Fort St. John, mounting 12 large guns. I killed the sentinel, and we forced the gates and took possession of the battery. I then felt like a god. I had 500 men at my command ready to shed the blood of tyranny. We loaded the guns, forced the arsenal and found 3,000 stand of arms, all new. There were many soldiers in the mob. I ordered them to form, and get into marching order, which they did, and I served out ball cartridge. We gave the command of the fort to an old officer, and telling him to keep a good look out, I marched through Lisbon with my army, and a band of music playing the Constitutional Hymn. The English Admiral fired a grand salute to our flag. The troops from the Algarves arrived on the opposite side of the river the day before the revolution, and had a very smart action. The Duke of Terceira came over yesterday at 2 o'clock, with 1,000 troops, and took possession of the city; he knew me the moment he saw me, and shook hands with me."

London, August 6.—City, half past four, the city never was in such a state of excitement, as at present. Government has just issued a notice for vessels to act as tenders for three months certain. An order has just been posted at Lloyd's, for two transports to be got ready immediately, to convey troops (it is said 3000) to Portugal, as it is supposed. It is said that Spain has sent forces to assist the Miguelite cause.

In England, the bill removing the civil disabilities of the Jews was thrown out in the House of Lords—though supported by Lord Bexley and the Lord Chancellor—by a vote of 104 against 54 for the bill. The Archbishop of Canterbury, the Bishop of London, and the Clergy generally, (the Archbishop o Dublin voted for it)—the Duke of Wellington and the whole Tory party opposed it—Lord Grey was absent, and was understood as not wishing the bill to be considered a government measure.

A dreadful account is given in the papers, which we have not room to publish, of the destruction by fire of the *Hibernia*, bound to Van Dieman's Land, with 232 passengers, of whom only 63 were saved.

Paris, Aug. 3.—The following appears in the *Journal de Frankfort*, which we received to-day by express:—

It is with deep indignation that we learn, by letters from the Russian frontiers, that another attempt at assassination has been made on the person of the Emperor Nicholas, which happily was discovered a short time before the day appointed for its execution.

We received at the same time a letter from Wisbaden, of the date of the 30th of July, which contains the following particulars:—

Some strangers, who have recently arrived at Frankfort from the North, are uncertain whether the Emperor Nicholas will go to Germany. According to their account the Russian Government is far from having got hold of all the accomplices of the conspiracy which was formed against the life of the monarch. It is said that, in consequence of the search caused by the projected attempt, it was discovered that great quantities of powder had been purchased at Riga, with which the conspirators intended to charge a mine, situated in the great road between Petersburgh and Wilna, and to set fire to it at the very moment the carriage of the Emperor should pass.

Later from New Grenada.—By the brig Elizabeth, Capt. Briggs, arrived last night from Carthagena, we received on official account signed by the Governor of that place, stating that he had received information of the discovery by the President of a conspiracy at Bogota on the night of the 23d July. Measures were immediately taken by him to arrest those concerned in it. Colonel Jose Manuel Montoya, military chief of the province, was ordered to apprehend an individual named Arjona, whose previous conduct had given cause to suspect him. While conducting Arjona to prison, Montoya was assassinated by him in the street.—His accomplices, sixty in number, thinking their plans discovered, that night fled from the capital on the road to Tunja. They were, however, all made prisoners by the Governor of that place, with the exception of five individuals, on the 26th. Among the number was the above named Arjona. And order was again restored.

Capt. Briggs states that a misunderstanding had arisen between one of the authorities of Carthagena and the French Consul, M. Barrot, who was in consequence confined in prison, but his liberation was momentarily expected. A French schooner of war was in the harbor on the point of sailing for Martinique, with the ratification of a treaty of commerce which had been concluded between New Grenada and France.—[Journal of Commerce.]

MISCELLANY.

The Duchess of Abrantes, in her Memoirs, speaking of the attachment of Napoleon to the young and promising son of his brother *Louis*, introduces upon one occasion the Emperor as telling the young prince his nephew the following story. It is a new version of an affecting catastrophe, familiar to all our readers through the beautiful lines of Mrs. Hemans, on the death of young *Casabianca*, and is translated for our columns by literally one of our "most youthful readers."

[For the New-York American.]

Mr. Editor—If the enclosed, translated by one of your most youthful readers, be deemed worthy of a place in your valuable journal, it will gratify

E. S. K.

CASABIANCA.

One day they were at St. Cloud, and the Emperor was telling a very interesting story, which he related with that power of voice and looks, which I have never seen, excepting in him. The young prince was at first seated on the knees of the Empress, but at length he slipped gently off, and came and placed himself before the Emperor, looking full in his face with his large blue eyes, animated with an expression truly admirable—they were sparkling sapphires. His little bosom heaved, and it was evident that he suffered with his emotion. The Emperor was relating a tale fitted to touch the heart of a child happily endowed. I have before noticed, I think, the talent he had for story-telling, and the taste he displayed in it. He often, for example, altered a little the truth, to increase the interest and effect. But on that evening, it was noticed that nothing was added: it was so judged by his own emotion. He related a naval battle, and, like Homer, he raised his voice above the waves: he made the cannon roar, and the dying groan. He placed you upon the deck of a vessel, the planks of which, stained with blood, and covered with bodies, began to complain under the action of the fire, of which a thousand tongues, of all colors, pierced through the hatches, and ascended encircling along the masts and yards. That vessel which a few hours before, lorded it royally in the harbor of Aboukir, and presented more than five hundred human beings, full of life and strength, on its deck, was deserted, and all those that had not been wounded by the bullets of the enemy, hastened to escape from certain death, by throwing themselves in the sea, and gained the shore by swimming. A single man yet stood there, his arms crossed on his broad chest. His features soiled with blood, black with powder and smoke, he looked with saddened eyes on another man still breathing, lying at his feet; having both his legs carried away, and losing both his blood and his life, without uttering a complaint: He thanked God, on the contrary, for having taken him from this world. His dying eyes were raised to look on the flag of republican France. A few steps distant from the dying man, was a young boy of about fourteen, dressed in blue, and without any mark of distinction. A small sword was by his side, and in his sailor belt were two pistols. He looked at the dying man with an expression of profound despair, but at the same time with a resignation which indicated that he too had done with life. That vessel was L'Orient—the dying man was Casabianca, commanding the Admiral vessel on the expedition to Egypt, and the young boy was the son of the veteran chief.

'Save that child!' said the Captain to the Quarter-Master—'save yourselves, both of you. There is yet time. Leave the old sailor to die by himself. He is now no more than a damaged old cartridge.'

'Advance not!' said the Midshipman, waving his hand towards him; save yourself. For me, my place is here; I will *not* leave my father.'

'My son,' said the dying father, casting a look on that noble child—a look, filled with all the joy that can animate the heart of a father—'my son, I command you to go!'

At that moment a fearful crash was heard among the planks of the vessel. The flames gained the mastery—a horrible explosion announced the fate of the victim of that dreadful day, that of the L'Orient. Already the planks were burning under their feet. The Quarter-Master for one moment felt an emotion of fear. His eyes glanced towards the shore, scarcely two hundred fathoms off, for, (said the Emperor) Admiral Brueys, the wretched man fought where he was embayed—that emotion, so natural to every man anxious to preserve life, was but transient. He resumed his indifferent attitude, only his eye twinkled as he looked at the young boy; and upon a sign from the dying father, he again attempted to force him away; but the youth presenting one of his pistols, threatened to lay him dead at his feet if he persisted.

'I should, and will remain,' he exclaimed. 'Save yourself, and may Heaven preserve you—you have no time to lose.'

Another crash, which burst from the bottom of the hold like a profound groan, made the sailor shudder. His eye turned to the magazine: the flames were on the point of reaching it. A few minutes more, and it would be too late. The youth felt all that that look implied, and throwing himself down by the side of his father, he encircled him in his arms—'Go,' he cried to the Quarter-Master. 'Father, bless me.'

These were the last words the sailor heard. He sprang into the sea, and stretched for the shore; but he had not made many strokes before the L'Orient blew up with a fearful explosion. He was still so near that he was covered by the nails and fragments torn from the ship in her last agony. He was taken up by the people on shore, was conveyed to head-quarters, and, added the Emperor, it was he that told us of the sublime devotedness of the young Casabianca. 'What should I do in the world,' said he, 'when his father again pressed him to go. 'You are dying—the navy is dishonored.'

It was a noble boy, pursued the Emperor. His death is the more to be regretted, as possibly he might have surpassed the Duguay Thouins, and the Duquesnes. I always remember with pride that he was of my family.

But it was a curious spectacle to remark the countenance of the young Napoleon—his large blue eyes fixed on the Emperor with an avidity which it is impossible to describe. And when his uncle had finished, he approached him, and getting on his knee, he said to him—Is it true, what you have been saying? What do you wish to know for? Because I will pray to God for that young boy and his father, answered the young Prince.

The Emperor was touched. He raised his nephew and embraced him. And you, too, said he, you will be a brave and a good boy.

The Troy Press is publishing a series of letters from Mr. Ball, a gentleman who formed one of the party that crossed the continent a year or two since, for the purpose of settling on the shores of the Pacific. We make a few extracts:

Face of the Country West of the Rocky Mountains.—One immense priarie extends from the mountains, with the exception of scattering trees, of the pinus genus, (mostly of the mountains,) to the Falls of the Columbia. Along the streams are willows, and often rank grass, but as you recede from them, a thin crop of rank grass and shrubbery succeeds, and the soil generally becomes barren. At the Falls commences a growth of oak, and at tide water, a thick growth of lofty trees of different kinds; still the prevailing character of the country is prairie until you get nigh the coast, where the growth of vegetables of all kinds is enormous.

The Climate of Oregon.—Here the farmer has not to labor half the summer and all the winter to provide for his animals—he is not compelled to fence and plough and sow his seed in *one* or *two* short months—he ploughs, and his cattle *graze* the whole year. The settlers in this valley have already raised one crop; which succeeded well. They have a few cattle, horses, and hogs, all of which are in good order, without any feeding through the winter. Although we are in the latitude of Montreal, the farmers have been ploughing since January, the vegetables in the garden have remained uninjured through the winter. In favorable situations the grass is already springing up. On the Wallameth, I saw two weeks ago, alders and willows in bloom, and leaving out. Strawberries and brier bushes had continued green through the winter. Crops that are put in the ground as late as July, yield a plentiful harvest. There is a vast difference in the temperature on the two sides of the Continent. Here the summers are long and fine, and everything can be raised, that can be raised with you, or even in Virginia. I have already spoken of the vine and the peach: tobacco has also been tried, and with success.

During November, Fahrenheit ranged at from 49° to 56°. One half of that month was as bright weather as any I ever saw; during that time there was usually a white frost every night. I am informed there fell that month 4 1-2 inches rain. In December 9 inches; frost but two or three times; thermometer in the morning at 40° at noon from 40 to 50°; rain from the S. and S. E. East and north winds always bring fair weather. Half of the month of January the weather was as cold as has been known in this region, there being a constant frost. At one time the thermometer ranged as low as 17°; at noon from 30 to 40°. The Columbia river froze over, but the Wallameth did not. During the rest of January, the weather was as usual; there fell but one inch of rain. This month (February) has been cloudy part of the time. There have been what you would call April showers, but the amount of rain that has fallen is not great. We have had frost a few times, though in the morning the thermometer has usually stood at 40°, and at noon at 50°. Nigh the ocean, it is said, it never freezes.

Valley of the Multnomah.—This week I have returned from an excursion up the River Multnomah or Wallameth. It is far from the stream laid down on your maps, for its most distant source is not probably more than 200 miles in a direct course from its mouth. Its general course is South and is fed by a number of branches from the Snow Mountains already spoken of, and a ridge running not far from the coast on the West. The river at one point approaches within fifty or sixty miles of the sea.

The valley of the Multnomah may be two hundred miles in length and fifty in breadth, and a beautiful valley it appears from what I have seen of it. Extensive plains well clothed with grass, interspersed throughout with oaks crowned with missletoe and lofty firs and pines, altogether presenting great facilities for settlers. The soil is generally fertile, though perhaps not equal to some on the Mississippi and Ohio. Its quality however, I should think, through the whole of it, will average with respect to fertility and the aspect of its surface, the lands of New-England.

Wherein then, do you ask, consists its advantages—I answer *in climate*.

White Residents.—Fort Van Couver is the general depot of the Hudson's Bay Company, West of the mountains. An express arrives and departs from this place once a year, for Hudson's Bay, and a so for Montreal. A ship arrives annually from England. Besides, they have three smaller vessels employed in trading along the coast, and in carrying supplies to the posts. To the north, along the coast, and also far inland, they have several posts. In short, their operations—trapping and trading for furs, are extended from California to the Pole. You are doubtless aware of the long standing of this company—its great wealth and extended operations over a region of country but little known to any but themselves.

The gentlemen of the company appear generally intelligent, especially Mr. McLaughlin, who is the acting Governor. Governor Simpson himself is at present at Hudson's Bay. There is also residing here a Mr. Douglass, a naturalist; but apprehending they might be a little jealous of imparting their hard earned intelligence about this region of country, I have not felt myself free to make many inquiries.

It is seven years since they commenced an establishment here, and having found it very expensive to furnish the number of persons they employ with provisions from England, or elsewhere, they have been induced to go quite extensively into agricultural pursuits. Mr. McLaughlin, having obtained a few cattle from California, has increased them to about 400. He raised the last year about 1200 bushels of wheat, barley, peas, Indian corn, potatoes, and garden vegetables. This year he is extending his operations. Fruit trees have been planted; among the rest the vine and the peach. They have sheep and hogs. Their horses they obtain from the Indians. The pursuit of agriculture seems to prosper well in their hands, though begun with difficulty. Mr. McLaughlin encouraged a few men (some of whom came out here with Mr. Astor's concern) to settle on the Multnomah, where, as I said, I intend also to settle. He has liberally engaged to lend me a plough, an axe, oxen, cow, &c.

Probable Diffusion of Original Population.—Every system of heathen mythology had its origin in the corruption of patriarchial worship before the dispersion at Babel. There the whole family of man was collected in the descendants of Noah's three sons, Shem, Ham, and Japhet; and thence, at that time, they were scattered abroad by the hand of God, over the world. Japhet colonized the whole of Europe; all those northern regions called Tartary and Siberia; and, in process of time, by the easy passage of Behring's Straits, the entire continent of America. His son Gomer seems clearly to have been the father of those who were originally called Gomerians; and by slight variations, were afterwards termed Comarians, Cimmerians, Cymbri, Cumbri, Cambri, and Umbri; and, in later years, Celts, Gauls, and Gaels. These extended themselves over the regions north of Armenia and Bactriana; thence over nearly all Europe, and first planted Britain and Ireland. Magog, Tubal, and Mesech, as we learn from Ezekiel, dwelt far to the north of Judea, and became the ancestors of the Sclavonic or Sarmatian families; the name of Magog still existing under the appellations of Mogli, Monguls, and Mongolians; those of Tubal and Mesech, in Tobolski, Moschici, and Moscow and Moscovites: Madai was father of the Medes, and Javan of the original inhabitants of Greece, where we may trace the names of his sons Elishah, Tarshish, Kittim, and Dodanim, in Elis, Tarsus, Citium, and Dodona. The posterity of Shem were confined to Southern Asia; founding by his sons Elam, or Persia, Ashur, or Assyria, a province of Iran, or Great Assyrian empire of Nimrod, whose son Cush appears to have subdued these descendants of Shem. Arphaxad became the father of the Hebrews and other kindred nations; his descendant Peleg founded Babylonia; and Joktan, stretching far towards the east, probably became the father of the Hindoos. Ophir, one of the sons of Joktan, is often mentioned in the Scripture as dwelling in a land of gold, to which voyages were made by ships issuing from the Red Sea, and sailing eastward; but Elam and Cush occupied the whole sea coast of Persia, as far as the Indus. This, therefore, brings us to the great peninsula of Hindostan for the seat of Ophir. Lud, the fourth son of Shem, is presumed to be the founder of Lydia; and Aram, the fifth, the father of Mesopotamia and Syria. Ham was at first mixed with Shem throughout Southern Asia, and became the sole occupant of Africa. Of his sons, Cush became the founder of Iran, or Central Asia, the great Assyrian empire, and the progenitor of all those called Cushim, Cushas, Cuths, Goths, Scyths, Scots, or Gauls. Mizraim peopled Egypt; Phut, the western frontier of Egypt, and thence passing west and south, spread over the greater part of Africa; and Canaan, it is well known, peopled the tract afterwards inhabited by the Israelites.—Thus, it is said, was the world peopled; and that it was thus peopled, we learn not only from Moses, but from profane writers; and find both accounts confirmed by abundant evidence in the manners, traditions, language, and occupance of the different races at the present day. Sir William Jones found only three great original languages to exist—Arabic, Sclavonic, and Sanscrit; and these three all issue from one point, Central Asia, whence, by consent of the most ancient records and traditions of the great primeval nations, their original ancestors spread.—[Howitt's History of Priestcraft.]

Man's Body a Machine.—Now grant that man's body is a machine, where are the points of resistance? are they not in the ground he stands upon? This leads us to inquire by what property we stand. Is it by the weight of the body, or, in other words, is it by the attraction of the earth? The terms attraction, or gravitation, lead at once to the philosophy of the question. We stand because the body has weight, and a resistance in proportion to the matter of the animal frame, and the magnitude of the globe itself. We wait not at present to observe the adjustment of the strength of the frame, the resistance of the bones, the elasticity of the joints, and the power of the muscles to the weight of the whole. Our attention is directed to the relations which the frame has to the earth we are placed upon. * * * By such considerations we are led to contemplate the human body in its different relations. The magnitude of the earth determines the strength of our bones, and the power of our muscles; so must the depth of the atmosphere determine the conduct of our fluids, and the resistance of our blood vessels; the common act of breathing, the transpiration from the surfaces, must bear relation to the weight, moisture, and temperature of the medium which surrounds us.

A moment's reflection on these facts proves to us, that our body is formed with a just correspondence to all these external influences.—[Sir C. Bell's Bridgewater Treatise on the Hand.]

Love of Life.—There is an indescribable something that ties us to life, For this purpose it is not necessary that we should be happy. Though our life be almost without enjoyment, we do not consent to part with it. Without going to the extreme of Mæcenas, who said, "though my hand, my foot, my hip, should refuse to do their functions, though I should have a mountain on my back, and my teeth be loosed in their sockets, nay, nail me, if you will, upon a cross, still I desire to live:" without this, there is nevertheless a sentiment that stirs within us, that produces an undefinable aversion to the thought of ceasing to be, "to lie in cold oblivion and to rot." It was this that inspired Robinson Crusoe, or whoever was his actual prototype, and every shipwrecked mariner, when he has found himself thrown on a coast without human inhabitants. It is a dreary thing to be cut off from the society of fellows and the accommodations of civilized life. We should almost expect an individual so circumstanced, to climb a neighboring promontory, and cast himself back into the element from which he had been rescued. But it is not so. He looks round, and begins to collect the fragments and broken planks of the vessel in which he had been embarked. He is like the wretch who watches a dying flame. He gathers together every combustible material that offers itself to his view, that he may detain the celestial visiter. He casts about and considers how he may supply himself with nourishment and shelter. He meditates perseveringly, and counts up all his resources. He shrinks from no labor. He is appalled by no privations. Life, life is the inexplicable thing we cling to; and however we may pretend to hold it cheap and to brave death when at a distance, we all of us, with very few exceptions, and those arising from a preternatural tension, verify the apophthegm of the Scripture, "Skin for skin, yea, all that a man hath will he give for his life." The mind of man bends itself after a short struggle to the yoke of necessity. "Things without all remedy," are found to be "without regard." We shut ourselves up within the compass of possibilities, and become reconciled to what cannot be avoided. There are indulgences without which a man thinks he cannot live; there are benefits that seem to constitute the core and soul of our existence; but, when these can no longer be had, we make the best of what is still within our reach.—[Godwin's Delorain.]

Sensibility of the Skin.—The fuller the consideration which we give to this subject, the more convincing are the proofs that the painful sensibility of the skin is a benevolent provision, making us alive to those injuries which, but for this quality of the nervous system, would bruise and destroy the internal and vital parts. In pursuing the inquiry, we learn with much interest that when the bones, joints, and all the membranes and ligaments which cover them are exposed—they may be cut, pricked, or even burned, without the patient or the animal suffering the slightest pain. These facts must appear to be conclusive; for who, witnessing these instances of insensibility, would not conclude that the parts were devoid of sensation? But when we take the true philosophical, and I may say the religious, view of the subject, and consider that pain is not an evil, but given for benevolent purposes and for some important object, we should be unwilling to terminate the investigation here. In the first place, we must perceive that if a sensibility similar to that of the skin had been given to these internal parts, it must have remained unexercised. Had they been made sensible to pricking and burning, they would have possessed a quality which would never have been useful, since no such injuries can reach them; or never without warning being received through the sensibility of the skin. But, further, if we find that sensibility to pain is a benevolent provision, and is bestowed for the purpose of warning us to avoid such violence as would affect the functions or use of the parts, we may yet inquire whether any injury can reach these internal parts without the sensibility of the skin being excited. Now, of this there can be no doubt, for they are subject to sprain and rupture, and shocks, without the skin being implicated in the accident. If we have been correct in our inference, there should be a provision to guide us in the safe exercise of the limbs; and notwithstanding what has been apparently demonstrated of the insensibility of these internal parts, they must possess an appropriate sensibility, or it would imply an imperfection.—How consistant, then, and beautiful is the distribution of the quality of life! The sensibility to pain varies with the function of the part. The skin is endowed with sensibility to every possible injurious impression which may be made upon it. But had this kind and degree of sensibility been made universal, we should have been racked with pain in the common motions of the body; the mere weight of one part on another, or the motion of the joint, would have been attended with that degree of suffering which we experience in using or walking with an inflamed limb. But on the other hand, had the deeper parts possessed no sensibility, we should have had no guide in our exertions. They have a sensibility limited to the kind of injury which it is possible may reach them, and which teaches us what we can do with impunity. If we leap from too great a height, or carry too great a burthen, or attempt to interrupt a body whose impetus is to great for us, we are warned of the danger as effectually by this internal sensibility, as we are of the approach of a sharp point or a hot iron to the skin.—[Sir C. Bell's Bridgewater Treatise on the Hand.]

AMERICAN INSTITUTE.

☞ THE Sixth Annual Fair of the American Institute will be held in the city of New York, at Masonic Hall, on Tuesday the 15th of October next, and continue three days

Premiums, consisting of Diplomas, or Medals, will be awarded, as usual, for such articles of American production, as shall be adjudged superior either in material or workmanship.

As a new impetus seems to have been lately given to American Industry, it is confidently expected that the Fair announced for October next, will present still more decisive evidence of the advancing condition of our agriculture, our manufactures, and the arts, than any of those which have preceded it.

Such ingenious and useful machinery as may be conveniently transported, and put in operation, will give interest and spirit to the occasion.

Each article should be labelled with the name of the manufacturer, or producer, and with the agent's name, and number, in this city.

The design is to inform buyers where they can supply them selves with the best articles. In this way, by means of former Fairs, many excellent workmen have become better known and have obtained permanent and profitable customers, who, while they have been better served, have at the same time rewarded and stimulated American skill and industry.

Articles entered for premiums must be delivered as early as Monday, the 14th of October.

More particular notices will be published previous to the Fair. For any other information which may be desired, apply to either of the Managers, in person or by letter.

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☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson under the name of *Durfee & May*, offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J B. Jervis. Eng. M & H. R. R Co, Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant. No. 53 South street, one door north of the Union Hotel. Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte —Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD. U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewin and Heartte— As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m66

☞ **GRACIE, PRIME & CO.** offer for sale, at 26 Broad street—

2 cases Gum Arabic }
20 do. Danish Smalts, EFFF }
10 do. Saxon do. do } Reduced Duty
100 bags Saltpetre }
2 do Gall nuts; 20 tons Old Lead
100 do. Trieste Rags, FF
6 boxes each 50 lbs. Tartaric Acid
6 do. each 25 lbs. do. do.
1 case 50 bottles Syrop de Vinaigre
10 cases White Hermitage; 20 do. Cotie Rotie
10 do Dry St. Peray: 50 do. Bordeaux Grave
20 do Chateau Grille; 5 cases each 12 bottles Olives in Oil
8 bales Fine Velvet Bottle Corks
100 do. Bourbon Cloves
30 do. Molieres Almonds
143 bundles Liquorice Root
4 bales Goat Skins
1 cask Red Copper, 1 do. Yellow do.

DRY GOODS BY THE PACKAGE.

10 cases light and dark ground Prints
40 do. 3-4 and 6-4 colored and black Merinos
15 do. 6-8 colored and black Circassians
2 do. Silk Bandannas, black and colored
4 do. Italian Lustrings
3 do White Satteens
4 do. White Quiltings
10 do. Barrie's Patent Thread, No. 22 and 25
10 do Super high col'd Madras Hdkfs, ent. to debenture
100 pieces Fine English Sheetings, for city trade
3 cases Cantoon Cords
2 do. Super blue, black, and colored Cloths—selected expressly for Merchant Tailors
23 bales low priced point Blankets.

PAPER—

IMPERIAL AND ROYAL—From the celebrated Saugerties Mills, of the following sizes, all put up with 480 perfect sheets to each ream—

Sizes—24x35. 24½x36, 21x34½. 25x36. 26x37, 29x41, 27x38½, 21x33, 24x29 24x28. 21x26. 21x27, 20x24, &c., &c.

Also—All the old stock of Medium will be sold at very reduced prices. to close sales, the Mill having discontinued making that description of paper.

ALSO,

Chinese Colored Paper—for Labels, Perfumery, &c.

5 cases each 1600 sheets Colored Paper
2 do do do do do superfine
2 do do do fig. do do
3 do do do plain Gold do
2 do do do plain Silver do
2 do do do Silver do with red figures
2 do do do Gold do do
2 do do do Red do Gold do
2 do do do White do Silver do A2

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
ml ly Germant. and Norris. Railroad

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 20th to the 26th day of August, 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
August 20..	6 a. m.	65	30.15	N	fresh	NNW	fair
	10	70	30.17	NNE	..	..	..
	2 p. m.	78	30.19	S	..	..	..
	6	73	30.19	SE	..	..	..
	10	69	30.19	..	..	..	..
" 21..	6 a. m.	65	30.19	NNE	moderate	S	..
	10	70	30.19	..	..	..	..
	2 p. m.	75	30.15	SE	..	SE	..
	6	69	30.13	..	..	..	cloudy
	10	65	30.10	..	fresh	..	..
" 22..	6 a. m.	63	30.05	..	moderate	S	..
	10	70	30.01	NNE	light	..	..
	2 p. m.	81	30.00	S	..	..	.. —hazy
	6	78	29.98	..	..	SW	.. ..
	10	72	29.97	NE	..	..	.. .. at S
" 23..	6 a. m.	70	29.90	..	fresh	{SW / ENE}	.. —foggy
	10	72	29.95	..	..	..	..
	2 p. m.	74	29.98	..	..	..	..
	6	68	30.00	..	..	..	..
	10	67	30.03	..	..	..	fair
" 24..	6 a. m.	61	30.15	..	moderate		clear
	10	68	30.17	NNE	..		..
	2 p. m.	73	30.18	[NE—E	light		..
	6	68	30.18	SE]	..		..
	10	65	30.18		..		..
" 25..	6 a. m.	66	30.18	SW	..		..
	10	74	30.18	..	moderate		..
	2 p. m.	78	30.10	SW to W	..	WSW	fair
	6	74	30.08	..	light	..	..
	10	70	30.08	..	..	..	..
" 26..	6 a. m.	66	30.03	WSW	..	..	..
	10	74	30.04	SW by W	..	..	..
	2 p. m.	81	29.98	SW	..	..	..
	6	79	29.96	..	..	..	..
	10	74	29.90	..	..	..	..

Average temperature of the week, 71°.

POETRY.

AUGUST.

Sweet sabbath of the year!
While evening-lights decay,
Thy parting steps methinks I hear
Steal from the world away!

Amid thy silent bowers
'Tis sad but sweet to dwell;
Where falling leaves and drooping flowers
Around me breathe farewell.

Along thy sunset skies
Their glories melt in shade;
And, like the things we fondly prize,
Seem lovelier as they fade.

A deep and crimson streak
Thy dying leaves disclose;
As on consumption's waning cheek,
'Mid ruin, blooms the rose.

Thy scene each vision brings
Of beauty in decay;
Of fair and early faded things,
Too exquisite to stay;

Of joys that come no more;
Of flowers whose bloom is fled;
Of farewells wept upon the shore;
Of friends estranged or dead;

Of all that now may seem
To Memory's tearful eye
The vanished beauty of a dream,
O'er which we gaze and sigh.

[*From the London Court Journal.*]

SHE IS NO MORE!

The rose upon her cheek was red,
And, on its faithless tint relying,
Though languor came and vigor fled,
We could not think that she was dying!

We bore her to yon distant shore,
Where Arno rolls, a stream of gladness!
But Alps and ocean, traversed o'er,
But added sorrow to our sadness!

Devoted beauty! on thy cheek,
Though deep Decay has placed her finger,
Still health imparts a glowing streak,
And there, unblanched, her roses linger!

There is no sorrow in thy sigh—
Like Hope, reposing on her anchor—
Thine eye is bright—thy cheek is dry,
But 'neath its vermeil tint, the canker!

So, when autumnal suns arise
And Nature's radiant form is brightest,
The groves display their richest dies,
But wither while their leaves are brightest.

MARRIAGES.

On Tuesday morning, the 3d instant, at Trinity Church, by the Rev. Dr. Anthon, Mr. C. B. MILLER, to SARAH A., daughter of the late Philip Verplanck, Esq., of Verplanck's Point.

This morning, by the Rev. Dr. Anthon, GEORGE A. JARVIS, to CATHARINE AMELIA, daughter of Samuel Jarvis, Esq. all of this city.

Last evening, by the Rev. Dr. Brownlee, GEORGE H. KISSAM, A. B., to Miss MARY ANN CORDRAY; all of this city. a31*

On Tursday morning, by the Rev. Dr. M'Elroy, Mr. ALBERT A. DOWNING, to Miss NANCY ST. JOHN, both of this city.

At Williamsburgh, L. I., on Tuesday evening the 3d instant, by the Rev. Dr. Johnson, R. J. WYCKOFF, merchant of N. York, to ELIZA ANN, daughter of Jordon Coles, Esq., of the former place.

DEATHS.

On Thursday morning, after a short illness, WM. C. BACHE, in the 22d year of his age.

On Thursday morning, Anna Lydia, infant daughter of Rev. H. P. Tappan.

On Friday, the 23d inst. Elizabeth Gertrude, only daughter of Seldon Huntington, of Haddam, Conn., aged 8 months and 15 days.

This morning, SARAH, wife of A. WOODHULL.

Yesterday, after an illness of six weeks, at the residence of his brother, No. 86 White street, Mr. HENRY BROOKS, aged 26 years, son of the Hon. P. C. Brooks, of Boston.

On Sunday, MATHEW WILLIAM, eldest son of Wm. Stodart, aged 10 years.

Last evening, of lingering consumption, at the Hotel of Stephen Holt, Esq. Mrs. JERUSHA S. HOLT, consort of Mr. Stephe B. Holt, and daughter of Mr. Cornelius Schuyler.

On Sunday afternoon, at 4 o'clock, after a lingering illness, Mrs. ANN B. MARSH, wife of William Marsh, aged 31 years.

On Tuesday morning, after a lingering illness, in the 38th year of her age, Mrs. CATHARINE CLANCEY, wife of William Clancey.

On Monday evening, (after a lingering illness, which was borne with Christian patience, and terminated with Christian hope,) Mrs. CATHARINE CLAYTON, wife of Mr. Joel T. Clayton, in the 46th year of her age.

Drowned on Friday last, 30th ult. Mr. SEWALL H. BARTON, aged 28.

This morning, in the 22d year of his age, DANIEL D., son of the Rev. Benj. Mortimer.

On Tuesday evening, the 2d instant, ELEANOR BURGER, the infant daughter of Thomas B. Whitlock, aged 18 months.

In this city, on Saturday, the 21st of August, Mrs. SARAH BRADY, consort of Gen. H. Brady of the U. S. Army, aged 55 years. The sympathies of the whole community, the united testimony of that same community to the high moral qualities and rare virtues of the deceased, must furnish a rich consolation to her venerable and afflicted husband, her children and immediate relations. As wife, mother, or friend, she had few equals, no superiors. The church, of which she was a bright ornament, can fix upon her life and the moment of her death, as among the most perfect illustrations of the power, the influence and value of the Christian religion.—[Communicated.]

Another of the few Revolutionists gone.—This morning, Mr. JOHN JOHNSON, aged 75 years and 4 months. His illness was long, and severe. He entered the service of his country before he was 18 years old, and continued during the whole period of the Revolutionary struggle, evincing the most earnest desire for the cause of freedom. One of the oldest merchants of the city, he has sustained until death, an unreproachable character, and left to his friends and society a valuable example of perseverance and industry.

In Brooklyn, September 3d, Mr. THOMAS H. BICKNELL, aged 30 years.

On Sunday morning, at Red Hook, after a short illness, EMILY CAROLINE, the wife of Robert Tillotson, Esq. and daughter of the late Nicholas Gouverneur, of this city.

In Westfield, Massachusetts, on Sunday last, ELI B. HAMILTON, Esq. councellor at law.

In Springfield, Massachusetts, on Sunday last, Lol. ROSWELL LEE, aged 56. Col. L. has been for the last 18 years, the Superintendent of the National Armory.

At Philadelphia, 1st inst. James Robinson, Printer, aged 34 years, of the firm of Sleight & Robinson, printers, of this city.

At Newburyport, Mass. 29th ult. Daniel Foster, Esq. Naval Officer of the port, aged 71 years.

Also, on Thursday morning last, JOHN, infant son of Colonle John Anderson, U. S. A., aged three years and eight months.—[Detroit Jour. and Adv.]

At New Orleans, August 13th, Dr. USELMA CLARK, formerly of Philadelphia.

At Havana, August 3d, of a fever, ANDREW EWELL, mate of the schooner Wanderer, and SAMUEL TARBELL, seaman of do both belonged to Camden, Maine.

At Texas, on the 29th July last, MARY, eldest daughter of Capt. Henry Austin, late of this city, in the 17th year of her age

In Liverpool, on the 31st July, after an illness of six hours, Mr. JOHN M'DOWALL, a partner of the house of Andrew M'Dowall & Co. of Charleston, S. C. Mrs M'Dowall had taken passage to sail next day in the line ship South America, for New York. He was accompanied to Liverpool by his cousin, Dr. Porter. It is thought that they had partaken too freely of fruit the day previous. Mr. M'Dowall was taken sick at 3 o'clock in the morning, and died at 9. Dr. Porter was taken ill the same day, and died the following morning.

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1½ do. ⅝ do.
800 do. 2 do. ⅝ do.
800 do. 2¼ do. ⅝ do.
soon expected.
} *Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. a3 4meowr

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 81 R J M M & F

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
81 R J M M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 5th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 R J M M & F

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

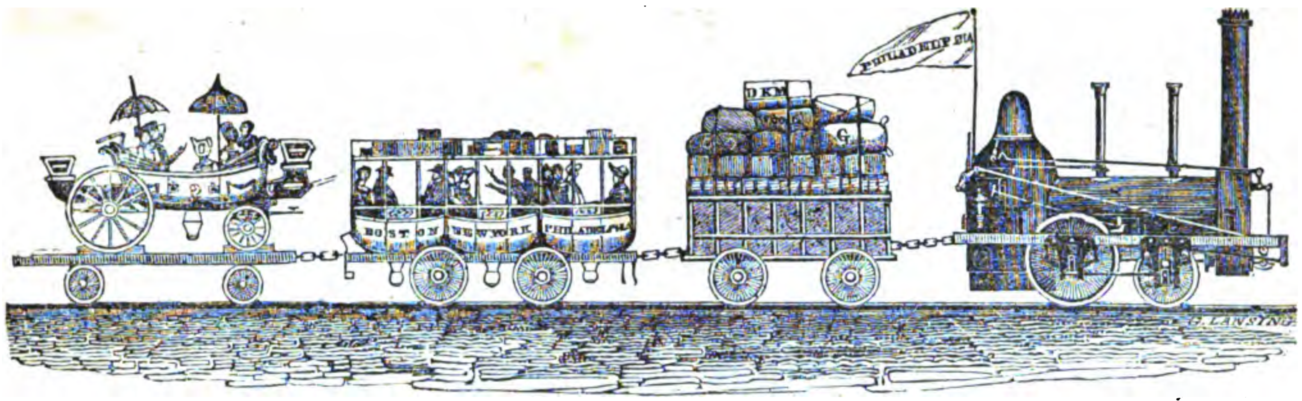
MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, SEPTEMBER 14, 1833. [VOLUME II.—No. 37.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, SEPTEMBER 14, 1833.

ITHACA AND OWEGO RAILROAD.—We continue in this number the Report of the Engineer of the Ithaca and Owego Railroad. It is very lengthy, entering minutely into detail of the preliminary and locating surveys, which, to many of our readers, will probably be interesting. It will be continued in our next. We also give a letter of recent date from JOHN RANDL, Esq., the Chief Engineer, which shows its affairs to be in a very favorable condition, and the road in rapid progress towaros completion; and we take this occasion to say that, sanguine as are the anticipations of the friends of this road, they will be *more* than realized. It will be a great thoroughfare.

We are gratified to learn that the New-York and Erie Railroad Company is organized by an election of Directors and Officers, a list of whom is annexed. No period, surely, could be more fitting than the present for bringing forward this long contemplated and noble undertaking. The public mind throughout the country is alive on the subject of Railroads.

The Erie Canal is, even at *this* time, insufficient for the immense interior trade of our rapidly increasing population, and, therefore, the proposed Railway is loudly called for, as well for the interests of this city, as for those of the southern range of counties, and the *great and fertile west.*

It is a work which promises important advantages, and great increase of value of property to those in whose immediate vicinity it shall pass. It therefore becomes those owning property in the *southern tier* of counties in this state, to deal liberally with those who may be authorised to receive subscriptions of land or property on the proposed route. They should not forget that great efforts are now making to complete a line of railroad from Albany to Lake Erie, as well as through the northern part of Pennsylvania and New Jersey, to New York; and that, if both should be constructed before that now under consideration, there will be but small prospect of their ever having one through the southern tier *east* of Broome county. There should be *unity* and *liberality* of action: no effort should be omitted, either by the inhabitants of this city, or by those living on the route, which may tend to its success.

Directors of the New-York and Erie Railroad Company, elected August 9, 1833*:* Stephen Whitney, Peter Harmony, John Duer, Goold Hoyt, James Boorman, William G. Bucknor, Elihu Townsend, Michael Burnham, Eleazar Lord, S. B. Ruggles, Benjamin Wright, D. N. Lord, *of New-York*; Jeremiah H. Pierson, and Cornelius J. Blauvelt, *of Rockland county*; George D. Wickham, *of Orange*; Joshua Whitney, *of Broome*; Jas. Pumpelly, *of Tioga.*

Eleazar Lord was elected President; Goold Hoyt, Vice-President; William G. Bucknor, Treasurer; John Duer, Esq., Counsel.

Office in the Rooms of the Treasurer, No. 42 Wall street, where all communications for the Company are to be directed.

WINCHESTER AND POTOMAC RAILROAD.—Mr. Robinson, the Engineer, has given public notice that proposals will be received by him in Winchester, till the 7th of November next, for the grading and masonry of the whole line of the road, being twenty-seven miles in extent—commencing near the town of Winchester, Va., and ending at the Shenandoah river. The line will be divided into sections, of convenient length, so as in that respect to accommodate contractors.—[Nat. Intel.]

We are enabled to state, from a highly respectable source, that the statement made on Monday, respecting the accident on the New-castle Railroad, was incorrect in several particulars, and that the assertion that two cars overturned was entirely erroneous; no car having been overturned, but the flanges of the wheels merely slipped over the rails by the pressure of the rear cars on the sudden checking of the steam. The Directors of the Railroad Line are now making a critical examination of the affair, and will immediately adopt such remedies as will effectually prevent the recurrence of any accident in future. There was no one injured, except one gentleman, who jumped from the car and was slightly hurt in his descent.—[Baltimore Gazette.]

NEW ENGINE.—The Earl of Dundonald has made a most successful trial of his newly invented rotary steam engine. A boat was propelled with great rapidity, and turned backwards and forwards through Westminster bridge several times. The engines are not larger than two Cheshire cheeses, and the whole apparatus so compact that a frigate's launch could be fitted with it. His lordship was accompanied by Mr. Ogle, Captain Brown, Mr. G. J. Mangary, &c. Some slight alteration, in a very minor detail, will be made, when their great improvement will be deemed complete, and applicable to our navy.—[London Herald.]

DREDGING MACHINE.—We yesterday had the pleasure of witnessing the operation of a newly invented and highly improved Dredging Machine, employed upon the canal to remove deposits of mud under water. It is the invention of our townsman, Capt. O. Teall, who has been 4 or 5 years in bringing it to its present state of perfection. The Machine is attached to a common scow, and is worked by one span of horses. Its merits have been fully tested, we understand, by the Superintendants of Repairs upon the whole line of the canal, and is confidently recommended by them all to the use of the State. It is peculiarly adapted to the purpose of clearing the bed of the canal, subject to the consequences of sudden freshets on the Mohawk, where heretofore it has been necessary to draw off the water to remove impediments.—Where we saw it in operation, as much mud was removed by it in an hour and an half, with the water at full height, as would have cost $25 by the ordinary method. We understand that the inventor is confident that it is adapted to the removal of the obstructions in the Hudson river, below Albany, where he intends to make a trial with it. We should judge that it must eventually come into use on canals generally.—[Onondaga Standard.]

AIR IN WATER.—Fresh water generally is calculated to contain one fiftieth of its weight of air. Water has an affinity for oxygen, which it absorbs. Chemists say its good or bad qualities depend on the quantity of oxygen which is produced or absorbed too much by salts, mud, &c.

VIRGINIA, August 9, 1833.

To the Editor of the American Railroad Journal:

SIR,—Permit me through the medium of your valuable journal, to communicate the project of an improvement in transportation peculiarly adapted to the kind of road and carriage which I have suggested, and to the transportation of cotton, or tobacco, or flour, or any dry article, in this southern and in the great western part of the country. It is nothing new in principle, for I am told it is an old custom in some parts of this country for the small planters to roll their hogsheads of tobacco to market. The proposition is to extend and improve this principle. You will now comprehend the whole at a glance.

It is simply to construct in a very strong manner, bound with iron, a large cylinder or cask, or roller, say 7 to 20 feet high, and sufficiently long or thick to receive the longest bales of cotton—say 5 to 12 feet; it would then only be necessary in practice to pack this tumbler perfectly full and tight, securing it so that no part of the lading could possibly shift.

It is manifest that a power equal to that of one horse, on such a smooth and level road of common-earth, as I have suggested, would draw or roll more than one of these machines any required speed. They would scarcely offer any resistance, attached to a steam carriage? Nay, I doubt not the power of one man on a tread-wheel would propel two of them with ease and rapidity, after being once in motion.

C. O.

Report of the Engineer in Chief of the Ithaca and Owego Railroad Company.

ENGINEER DEPARTMENT, Feb. 26, 1833.

To the President and Directors, &c.:

GENTLEMEN,—I have the honor respectfully to submit the following Report, on the Reconnoissance, Preliminary Surveys, Experimental Lines, and Final Location of your Road from Ithaca to Owego, with Plans and Profiles thereof; together with the present state of the work upon the road, and the estimated cost and time to complete the same.

It will, no doubt, be readily admitted by all who examine the subject, that this road, (in addition to the immediate advantages to be afforded by it to the villages at each end thereof, and persons living in the vicinity,) is destined to become one of the most important links in the chain of internal improvement that has yet been projected in this section of country, to connect the cities of New-York, Philadelphia, and Baltimore, with the Erie Canal and Lake Ontario, and the numerous towns and villages bordering their shores.

The village of Ithaca, at the northerly termination of this railroad, is situated on the inlet of the Cayuga Lake, about one mile and a half south of it; from which place there now is, and for some years has been, a water communication with the *Erie Canal,* at Montezuma—with *Lake Erie,* at the villages of Buffalo and Black Rock—with *Lake Ontario,* at the village of Oswego—and with the *Hudson River,* at the city of Albany.

When the Ithaca and Owego Railroad is completed, this connection will be extended southerly to the Susquehanna River, at the village of Owego; from which place that river is navigable to the head of tide water at Port Deposit, for arks and rafts, at the spring and fall freshets, from about four to five weeks each spring *before* the Erie Canal can be used from Utica to Albany.

From the village of Owego a short route may be obtained to the city of New-York, by the way of the New-York and Erie Railroad, which is to pass through this village. A charter for this road was obtained from the Legislature of this State last winter; its friends confidently expect that it will be commenced and completed thus far at an early day. Until that is done, a large portion of the produce of this section of country must be taken through the accustomed channel to a southern market.

Lumber, grain, provisions, and other productions of this section of country, are taken every season from Owego to the city of Philadelphia, by the Susquehanna River, and Pennsylvania and Union Canals: or, passing by the Union Canal at Middletown, continue down the Susquehanna River to tide water at Port Deposit, or Havre de Grace; and from thence proceed down the Chesapeake Bay to the city of Baltimore: or, leaving the Susquehanna River, at Havre de Grace, proceed to Turkey Point, and thence passing up the Elk River to Back Creek, and through the Chesapeake and Delaware Canal to the Delaware River, ascend that river to Philadelphia: or, passing by the mouth of Back Creek, ascend the Elk five miles further, to Frenchtown; and from thence pass over the Newcastle and Frenchtown Railroad to the Delaware River at Newcastle, and ascend that river to Philadelphia.

A considerable amount of the lumber used by me in the construction of part of the Chesapeake and Delaware Canal, was brought down the Susquehanna River, from the neighborhood of Owego. This lumber, even with the addition of a heavy charge for land transportation across the Delaware peninsula, (fifteen miles,) cost *less money at that time* (1824) than lumber of equal quality brought down the *Delaware River.*

It is a circumstance worthy of observation in relation to the location of this railroad, that *its summit* (a marsh about 8½ miles south 40° 35′ east from the village of Ithaca) is *also* the summit which divides the waters running *northerly* into the *Atlantic Ocean,* by the way of the Beaver Meadow Brook, the Six Mile Creek, the Cayuga Lake, the Seneca and Oswego Rivers, Lake Ontario, and the River St. Lawrence; from those which descend *southerly* to the same ocean, through the Cattatunk and Owego Creeks, the Susquehanna River, and the Chesapeake Bay.

This summit swamp is three feet *below* the level of the railroad at that place, and *above* the level of the

	Summer height.	Above the level of the Atlantic.
Susquehanna River at Owego,	189 ft.	777 ft.
Ohio River at the mouth of the Muskingum,	400	566
Lake Erie,	402	564
Genesee River at the Erie Canal,	467	499
Seneca Lake,	547	419
Rome summit, (old Canal,)	547	419
Erie Canal at Utica,	553	413
Erie Canal at Syracuse and Salina,	576	390
Cayuga Lake at Ithaca	596	370
Seneca River at the Erie Canal,	596	370
Oneida Lake,	604	362
Onondaga Lake,	615	351
Lake Ontario,	734	232
Atlantic Ocean,	966	—

The waters of the Cattatunk Creek and Beaver Meadow Brook approach within 300 yards of each other, in this swampy piece of ground, which for 300 yards in length, and 150 yards in breadth, varies less than three feet in elevation.

This swamp is situated in a remarkable pass between two ranges of hills or mountains of rock, from 400 to 500 feet in height, which stretch along the valleys of the Six Mile and Cattatunk Creeks, nearly the whole length of the road; being, nevertheless, frequently broken and interrupted by deep ravines, formed by tributaries to the Cattatunk and Six Mile Creeks. The valley formed by the Beaver Meadow Brook and Six Mile Creek, and their tributaries, between the summit and Ithaca, varies in breadth from about 90 to from 1600 to 1700 yards, except at the falls about two miles southeast of Ithaca, where the water rushes through a chasm in the rock several hundred feet in length, and from forty to sixty feet in height and breadth. This valley consists of side-lying ground and rock, with sinuous and undulating surfaces of great acclivity, varying laterally from 10 to 100 feet in elevation, and is indented by deep and broad ravines, extending in most places from the foot of the mountain on either side, to near the bed of the Beaver Meadow and Six Mile Creeeks: and taken together, present formidable obstacles to the location of a railroad at a reasonable cost, with either *moderate slopes* or *gentle curves.*

The valley formed by the Cattatunk Creek and its tributaties, between the summit and Owego, is of a different character from that north of the summit; here the breadth of the valley increases as you proceed southerly as far as the village of Candor, at which place it has a breadth of from 4,000 to 5,000 feet; from this village southerly to within about two miles of Owego, the valley again decreases to a breadth of only 2,000 feet, and then opens into the valleys of the Owego Creek and Susquehanna River.

From the summit to Owego, a narrow slip of flat, or bottom land, may generally be found along the sides of the Cattatunk; it, however, is not always to be found on the *same side* of that creek. This creek has a tortuous course as it meanders through those flats—sometimes washing the foot of the rock on one side of the valley, and then again (almost immediately) deflecting abruptly across to the foot of the rocks upon the opposite side.

In addition to the obstacles thus presented to the location of this part of the road, in the vicinity of, or upon *any one side* of the Cattatunk, (without destroying its utility, by abrupt curves, or sacrificing the prospects of the stockholders by heavy cuttings, and high embankments, or grades of great acclivity,) it was found that this portion of the bed of the valley consisted in places of a succession of shelves, or tables of land, from ten to twenty and thirty feet above the flat or bottom land; these shelves in many places approach the creek, and in some instances form spurs of land; in other instances steep side-lying hills; and in many instances, the shelves or table land upon opposite sides of the Cattatunk nearly interlock, or pass by each other at abrupt turns of that creek, and thus present very formidable obstacles to straight lines, gentle curves, and grades.

In addition to the preceding obstacles to a good location at a moderate cost, a considerable part of the valley was in a high state of cultivation, covered with numerous buildings, which it was desirable should be saved if practicable.

After having made these reconnoissances, the small capital of the company to make this *great extent of road, over such a section of country,* admonished me that the utmost circumspection and care in the location, as well as in the choice of materials for the road, were indispensably necessary in order to insure a profitable investment of the stockholders' money.

Having stated the preceding facts to the Directors, (some of whom accompanied me along the whole route selected for this railroad,) and the difficulties connected therewith, they unhesitatingly concurred with me in opinion, as to the measures to be taken to obtain a good location, and thus enable me to make their road at a moderate cost: to obtain this object, they approved of the plan I recommended, viz.: not to make a final location of the road until every part of the valley had been thoroughly examined by surveys, and levels of sections run across it, at short distances apart; together with measurements of all the buildings, and other improvements, that might be in the way of a good location.

In accordance with this plan, a base line was surveyed and levelled from Ithaca to Owego, through the whole extent of the valleys of the Six Mile, Beaver Meadow, Cattatunk, and Owego Creeks; beginning at an iron bolt placed by myself in the wharf at the Inlet of the Cayuga Lake, at the ordinary level of that lake during the summer months. Lines were then surveyed and levelled, across the whole bed of the valley, at stations generally about five hundred feet apart on this base line, and at right angles thereto; and in cases where it was judged needful for the purpose of obtaining a better location for the road, these surveys were farther extended to the foot of each hill.

In addition to the surveys and levels of these cross lines, every road, building, creek, and other object worthy of note,—(and which, if practicable, were to be avoided in the final location of the road,) were measured, and the whole of the information thus obtained was laid down upon maps on a large scale; and all the elevations that had been taken of stations upon the base and cross lines, and of such other points as presented obstacles to the attainment of the best location, were written in figures at their proper places upon the same map.

Upon this map experimental lines and curves were projected with great facility during the winter season, and with as much certainty as could have been acquired by many surveys, levels, and examinations, made in the field: and in the spring these experimental lines and curves, from the summit of the road southerly to the Susquehanna River, (the lines and curves north of the summit having been previously laid out, and that part of the road put under contract,) being transited and levelled, fully tested the great advantage of the preliminary surveys and maps.

Although a good location for part of the road was thus obtained, yet in consideration of the small capital to be expended it was considered good economy to expend some time in making further examinations, in order to save expense where it was practicable to be done, in crossing and re-crossing the Cattatunk Creek, passing around spurs of hills, and ascending or descending from the shelves or table land found upon both sides of that creek.

The point of land projecting from the west hill, from the county line, 11 miles south-easterly from Ithaca, extends so far easterly as to leave only a valley 200 yards in width between it and the east hill, for the passage of the waters of the Cattatunk. As this point of land (the top of which is level for a considerable distance) lays directly across the track selected as the most eligible for the ground lying to the north and to the south of that place; and the table land upon its top was found so high above the low ground on each side of it, as to have required too great an expenditure of money in deep cutting and heavy embankments, to be adopted, it was therefore avoided by passing in the valley around the foot of that spur, with a curve of 7,000 feet radius, the valley not admitting of a longer curve.

The bend in the line at this place made it necessary to encounter deep cutting and heavy embankments through a low point of the east hill, near Mr. Lane's tavern, which projected into the swamp, north of the county line: or to apply one or more reverse curves to avoid it, in doing which, the line was again thrown upon upland requiring deep cutting and heavy embankments to the north of that place.

Various lines were run to avoid the deep cutting at Lane's hill, and after a careful examination of all of them, and of the infirm ground in the swamp north of that hill, it was found, that to make the best road, it would be the best economy to encounter that deep cut; the straight line crossing that hill has, therefore, been adopted.

This cut consists principally of gravel, and is 2,300 feet in length, with an average height of 14 feet, the greatest height being 21 feet.

By the aid of an economical plan of constructing dry walls to save the excavation of large slopes on the sides of the deep cut, the cost of this cut, including the great length of embankment to be made with this excavation at each end of the hill, will not much exceed the same length of road grade north of the summit.

Important savings to the company were also made by these re-examinations, aided by the maps before spoken of, by reducing the curves at the eastern and western spurs of hills near the village of Candor, the most northerly of which passed around the eastern point of the hill, at Booth's mill pond, near the junction of the northern and western branches of the Cattatunk Creek. This curve was reduced to 7,000 feet radius, to avoid crossing and re-crossing the northerly branch of that creek; but it became necessary, by such removal of the line, to cross the more rapid Shanandagan Creek near its junction with the Cattatunk, about one mile north of the mill pond.

To have avoided the crossing of the Cattatunk Creek, at Booth's mill pond, by passing around the foot of the high land at that place, and crossing the creek at the village of Candor, would have required too small a curve to be safe for cars passing that place under high velocities; in addition to which, a small curve at this place would have made it necessary to make another small curve at the village of Candor, attended with more cost in excavation and embankment, or in removing buildings, than the re-crossing of the creek at that village. A due regard to economy, and safety, recommended the adoption of the line that crossed the Cattatunk at the head of Booth's mill pond, upon a curve having a radius of 7,000 feet, and re-crossing that creek at Candor.

The next crossing and re-crossing places for the road over the Cattatunk, are at Chidsey's mill pond, eight miles north of Owego, which lies in crescent form, at the foot of a steep sideling hill of the same form, upon the *east* side of the Cattatunk, which is composed of hard pan, clay, and quick-sand, well known to be very expensive to excavate, and bad materials for a road. To have constructed the road along the *east* side of this pond, to avoid crossing and re-crossing it near this place, would not only have required a small curve along the pond, but another small return curve would have been necessary to get the road upon favorable ground for its continuance southerly. Such line would have been very expensive, even if no regard were had to the injury to be done to Mr. Chidsey, by passing through his mill yard, and thus damaging his property.

After crossing to the west side of the Cattatunk Creek at the head of Chidsey's mill pond, it was found impracticable to continue upon that side of the creek, with due regard to cost and to curves, on account of the ledges of rock, deep cuttings and heavy embankments, that must have been encountered at Robinson's mill pond, and Williams' hill.

These were avoided, by crossing to the east side of the Cattatunk below Chidsey's mill, re-crossing it to the west at Anderson's Island and Williams' hill, and again re-crossing the Cattatunk Creek, for the last time at Mr. Woodbridge's lane and bridge. The road embankment will, nevertheless, be slightly washed by this creek at three places to the south of this bridge.

The crossing at Anderson's Island, and re-crossing at Mr. Woodbridge's, were made necessary by the easterly course of the creek, from that island to a steep and crescent form of the east hill, composed of clay and quick-sand, or hard pan; and by the westerly course of the creek, on and near Mr. Woodbridge's land, until it again washes the foot of a steep west hill; along which it runs nearly to its junction with a rapid flood brook, from a valley of the westerly range of hills.

The line of road generally crosses the Cattatunk Creek with considerable obliquity, and some extra expense must be incurred, to pass the streams under the road, as nearly at right angles as practicable. It, however, crosses the Owego Creek, (about two miles from the village of Owego,) nearly at right angles.

This is considered the most difficult stream upon the line to pass in safety, and will require a heavy expenditure of money, as may be seen by the accompanying estimate of masonry, &c. The Cattatunk Creek, from Candor to Owego, being in times of freshets navigable for arks, the viaducts to be built across that stream must, of course, be elevated to such a height as to admit of their passing under them.

The road bridges, built across that creek by the inhabitants of the country, are from 9 to 12 feet above the level of low water, at those places. Several of them have been built for many years, and all of them have been found sufficiently elevated to admit of the passage of arks descending that stream.

When the prices of lumber and fuel, in the valley of the Cattatunk, are so much increased as to make it the interest of the inhabitants to clear off the hills, or mountains, bounding the valley of that creek; the rain and melted snow descending from those mountains without being checked in their passage by any vegetable growth, may be expected to increase the height of the floods in that creek; and of course to give that water an uninterrupted passage under the railroad, the height and length of the viaducts to be built across the creeks, must be increased beyond what might now be considered ample dimensions for them.

These increased dimensions for the viaducts, (of which there must be in number 8 small and 8 large ones, and together amount to from 960 to 1030 feet in length,) will considerably increase this item of expense in the construction of the road—not probably chargeable to *grading*.

The great abundance of building stone to be found in the neighborhood of the Cattatunk and Owego Creeks, will enable me, with good economy, to substitute abutments and piers of solid masonry, for wooden trussels, in building the viaducts across those creeks.

The superstructure of wood to be laid upon those abutments and piers, if made after the model exhibited, and recommended to your Honorable Board, will, it is believed, be sufficiently firm to admit the spaces between them to be increased to *forty feet*.

When these superstructures of wood decay, instead of replacing them with wood, they may be substituted by arches of solid masonry, by buiding an additional pier between each of those now to be erected.

From these reconnoissances, surveys, and examinations, it became manifest that the maps before mentioned (which comprised the elevations and improvements of the whole district of country deemed at all eligible for the location of your railroad) had enabled me, at a *very small cost*, to select for this road the *most gentle grades*, (the maximum rise being reduced to $21\frac{13}{100}$ feet per mile,) *curves of the greatest radii*, (being from 7,000 to 100,000 feet, except at the villages at the northerly and southerly terminations of the road,) *straight lines of the greatest length*, and a *route the most eligible* and *least costly* that the country would afford; and that, too, with *more certainty* of being the *best*, and at *much less cost* than it could have been done *without* these preliminary surveys and maps.

I now have the satisfaction of assuring your Honorable Board, that the whole road is located, (except about one mile at the village of Owego, which has been omitted at the request of some of the Directors,) and that it is my firm and honest conviction, that by the above mentioned mode of proceeding in making the preliminary surveys and maps, I have obtained the *most eligible routes, grades* and *curves* the most *gentle*, with straight lines connecting them of the *greatest length* that the country would afford; and that the cost of constructing the road (taking into consideration the natural obstacles to be overcome) will be found unusually small, and *much less* than could have been reasonably anticipated, by any person having only the slightest claim to experience in works of this kind; and further, that the plan and location which has been adopted, will save to the stockholders in the construction of their road, a sum of money amounting to *at least one third* of the whole cost of grading it; and that the amount of work to be done upon it is so reduced, as also to save one year in the time required for its construction, when compared with the best location that could have been obtained *without* the aid of these preliminary surveys and maps.

It affords me much pleasure, gentlemen, to be assured that your Honorable Board appreciate the savings thus made by me; and to know that you have done me the kindness, as well as the justice, to award me your unanimous approbation.

Preliminary Surveys and Experimental Lines, preparatory to the final location of the Inclined Planes at the Ithaca Hill.

One of the most formidable obstacles that has presented itself in the location of this railroad, is the great elevation of the ground at the summit between Ithaca and Owego, over which the railroad had to be taken; and the unfavorable situation of the land and rocks between that summit and the Ithaca flats.

This summit, as before mentioned, lies 8½ miles south-easterly from the village of Ithaca, and is 596 feet above the level of the Cayuga Lake at its summer height.

The Ithaca flat is about one mile in breadth between the Inlet bridge and the foot of the hill bounding it to the south; the greatest elevation that could be obtained (at a moderate cost) for the road at the foot of that hill, by building it upon embankment from the Inlet to that place, did not exceed 12 feet above the level of the lake; which being taken from the elevation of the swamp at the summit, (596 feet,) left an elevation of 584 feet between the Ithaca flats and the summit swamp, to be overcome in a distance of 7½ miles, by locomotive or stationary power; and amounts to an average rise of 78 feet per mile for this whole distance; which is a greater ascent than has yet been overcome by locomotive engines, constructed upon the most improved plan.

The valley of the Beaver Meadow and Six Mile Creeks was, upon examination, found to present insurmountable obstacles to the attainment of this grade, for this part of the road, within the means of the company's funds; it, therefore, became needful to resort to stationary power to overcome so much of this elevation as could not be attained, by applying to the ground between the inclined plane and the summit, an uniform or undulating grade, within the *maximum* ascent fixed upon for the whole of the road, (except the inclined plane,) viz.: $\frac{4}{10}$ of a foot rise to 100 feet of base, or $21\frac{12}{100}$ feet per mile.

An experimental line was run from the summit northerly, on a grade descending *uniformly*, at the rate of $\frac{5}{10}$ of a foot base, to 100 feet of perpendicular rise, or $26\frac{4}{10}$ feet per mile, as far as it could be done with any prospect of success; this line and grade was found to be *ineligible*.

Numerous other lines and grades along both sides of the valley of the Six Mile Creek, as well as along the Cattatunk, were also examined; from all of which it was found to be impracticable, at a reasonable cost, to obtain a good location upon a *level line*, or upon one of *uniform descent*, either from the summit, any considerable distance southerly towards Owego, or northerly to the head of the inclined plane at Ithaca; and that an *undulating line must, of necessity*, be adopted for a considerable part of the whole route; it was, therefore, deemed most expedient to adopt an *undulating line of gentle grade*, (the *maximum* grade to be $21\frac{12}{100}$ feet per mile, or $\frac{4}{10}$ of a foot rise to 100 feet of base,) in all cases where it would insure a saving to the company.

A good location for the road, over a considerable portion of the section of country lying between the summit swamp and the Ithaca hill, could have been obtained upon the *east* side of the Six Mile Creek, by encountering heavy cuttings and embankments near the mills upon that stream, and by applying to it an inclined plane and stationary power to overcome about 110 feet of elevation near the junction of the Beaver Meadow Brook with the Six Mile Creek, (about five miles south-easterly from Ithaca,) in addition to the inclined planes that must of necessity have been made in the neighborhood of Ithaca, to overcome so much of the remaining elevation between the foot of that plane (five miles from Ithaca) and the Ithaca flats, as could not be overcome by grading the road to its *maximum* ascent.

The great cost of making a road upon *this side* of the valley of the Six Mile Creek, together with the liability of increased inconvenience and damage, both to the merchant and to the company, from accidents and detention at an inclined plane such a distance (five miles) from the nearest market or village; when compared with a route that could be obtained at a *less cost* upon the west side of the valley, without being compelled to resort to stationary power at any place, except at the Ithaca hill; where all the stationary power required for the whole road could be located at one place, and that, too, within less than half a mile of the village of Ithaca, and only about one mile from the navigable waters of the Cayuga Lake, gave advantages for the line on the *west* side of the valley of the Six Mile Creek, which could not be obtained for any line on the *east* side or in the *bed* of the valley of that creek: the *west* side of the valley of the Six Mile Creek was, therefore, selected as *the most* eligible for the location of the road.

After having, by means of the preliminary surveys before mentioned, found that the *west side* of the valley of the Six Mile Creek was the *most eligible* for the location of the railroad, further examinations of the ground upon that side of the valley were thereupon made, and the *most eligible line and grade* for the road, between the summit swamp and the head of the proposed inclined plane at Ithaca, was found to be between the elevations of 450 and 600 feet above the level of Cayuga Lake.

The most eligible route for 6½ miles of the road north of the summit, (and extending to the table land, near the top of the Ithaca hill, and within one mile of the Ithaca flats,) being thus brought to within such narrow limits, the next point to be attended to was the definitive location of this part of the route, and of the inclined plane to connect it with the road to be located upon the Ithaca flats.

The elevation of the summit swamp being, as before stated, 596 feet above the level of the Cayuga Lake, and the *maximum* grade for the road being fixed at $21\frac{12}{100}$ feet descent per mile; it follows, of course, that if the ground would have admitted of the application of this maximum grade for the whole distance of 6½ miles, from the summit northerly to the head of the inclined plane, near Ithaca; that then the above elevation would have been thereby reduced $137\frac{28}{100}$ feet, and left the head of the plane only $458\frac{72}{100}$ feet above the level of the Cayuga Lake; if from this, the height of embankment (12 feet) made for the road bed at the foot of the inclined plane be taken, there would have still been left an elevation of $446\frac{72}{100}$ feet to be overcome by stationary power, which is $64\frac{28}{100}$ *less* than that of the line adopted.

But the ground between the head of the plane and the summit, along the line traced by this grade, was, upon examination, found to be *ineligible for a good location*, and it of course was rejected. Various other experimental lines and grades were applied to the ground lying between the summit and the head of the inclined planes, of which the one hereinafter described, being found the *most eligible route*, both as to *line* and to *grade*, that this section of the country would afford, it was adopted.

[*To be continued.*]

We have already informed our readers, says the Petersburg Intelligencer, of September 2d, of the completion of the Railroad between this place and Blakely, on the Roanoke. The arrangements for carrying the main Southern mail and passengers are now in full operation. As this road has become a very important link in the chain of communication between the North and the South, we have obtained from a friend, for the information of travellers, the following statement of the advantages:

"The mail and passengers are now transported, by aid of the Railroad, between Petersburg and Fayetteville, in 36 hours—distance 219 miles—from this town to Baltimore, by the way of Norfolk, by steamboats, in 28 hours; by the way of Washington, in 32 hours; from Baltimore to Philadelphia, in 9 hours; making the whole time taken in travelling from Fayetteville, N.C., through Petersburg to Philadelphia, but 73 hours—and such is the arrangement of the line, that the passengers are not disturbed of their rest but *one night*. The road from Blakely to Fayetteville is known to be one of the best in the Southern States, and the horses and coaches first rate. We are not aware that any route of communication from the South to the North presents as many comforts and convenience to the traveller as the above."

BROOKLYN AND JAMAICA RAILROAD COMPANY.—At a late meeting of the Directors of this Company, the following gentlemen, viz., John A. King and Nathan Shelton, of this village, Charles Hoit and Samuel Smith, of Brooklyn, and Abner Chichester, of New-York, in conjunction with Mr. Douglass, the Engineer, were appointed a Committee to determine upon and locate the route of the Railroad, and to make the preliminary arrangements for carrying into operation the plans of the Company. The committee are to enter upon their duties next week, and no doubt will soon make such arrangements as will justify the immediate construction of the proposed road.—[Long Island Farmer.]

RAILROADS AND LOCOMOTIVE ENGINES—*Rapid and Easy Mode of Travelling.*—We are indebted to an esteemed friend for the following communication. The writer is a gentleman of much experience and observation upon the subject under consideration, having visited Europe for the purpose of becoming familiar with the Railroads, and other works of internal improvement, in use and in progress there, and, since his return, successfully engaged in the construction of Locomotive Engines.

He need not fear of extending his communication upon the subject beyond our limits, or desire for publication, nor of being too minute in his detail, for he will please recollect that the object of this Journal is to give such information as will make the subject *better understood*—by the great mass of this community—and in no way can this object be so well attained as by giving minute descriptions, with engravings of every part and mode of construction of Railroads and Railroad machinery. We, therefore, make him, and others similarly engaged, who will furnish us with descriptions and drawings of *whole* or *parts* of machines now in use, or of *improvements* upon them, or of *new inventions* for rails or machinery, which may tend to this object, a place in the Journal, and the engravings to be made at our expense.

NEW-YORK, September 9, 1833.

DEAR SIR,—Agreeably to your request I herewith send you a few extracts from memoranda taken during a late visit which I made to several of the most important railroads in the country, with a view of examining the different locomotive steam engines, in order to ascertain their practical effects on the several roads, and to collect and compare such facts connected with the subject as might fall under my observation. Hoping the few general extracts which I have made may interest some portion of your readers, I am, very respectfully, yours,

E. L. MILLER.

The first road I visited was the Mohawk and Hudson, extending from Albany to Schenectady, a distance of 16 miles. Of thi distance their locomotive engines work 12 miles.

The John Bull, an English engine, has been at work upon this road with perfect success since October, 1831. From the great weight upon her driving wheels, she was found to injure the road, and during the last winter she was put upon six wheels, after the plan adopted by J. B. Jervis, Esq. in the locomotive "Experiment," which had been fully tested the past year on the same road. They still do a part of the work on this road, with horses, and in order to compare more accurately the expense of horse and steam power, Mr. Whitney, their intelligent superintendant, informed me that he had the last spring opened an account with each, and found the result to be as 3 to 5, in favor of steam, and this where wood is worth from four to five dollars per cord.

The Saratoga road connects this road with the village of Saratoga, and is 22 miles in length. This road was opened for travel in July, 1832. The first locomotive engine commenced her regular trips in June last, and has since continued to work in the most satisfactory manner. She is called the Saratoga, burns coke, is a six wheel engine, and taking into view the ease with which she works upon, and the little injury she does the road, I consider her the best engine I have seen.

The next road in course was the Camden and Amboy, which has one track laid to Bordentown, 36 miles. It is constructed after the English plan, with Mr. R. Stevens's improved iron rails and that part of the track which has been recently laid, has a better surface than any railroad I have ever seen, either in this country or in England. Passengers are still carried on this road by horses, 180 of which, I am informed, are required to perform the business 36 miles. Arrangements are making to convey passengers by steam, which will be completed in a short time. Three or four engines are already on the road, and as many more nearly in readiness. I saw one of these conveying materials for construction, and was much pleased with the power she exhibited to overcome ascents with her load.

I next visited the Philadelphia and Germantown road, 6½ miles of which are completed and traversed by two locomotive engines, both of which were constructed in this country. The one constructed by Mr. M. W. Baldwin, of Philadelphia, has performed for five or six months in the most satisfactory manner. Mr. B. has introduced some simplification of the usual plan, of working the valve, gear, and reverse, by hand, which gives that part of his engine a decided preference over most of the English engines.

The grade of the road is very unfavorable for this kind of power, having an average ascent of 35 feet per mile, on which are several very abrupt curves. And here I cannot but observe how important it is in constructing a railroad, where the locomotive engine is designed to be used, that no *reasonable pains or expense should be spared* to bring both the *grade* and *line* of the road within the *effective power* of that useful machine. To illustrate this, the engine constructed by Mr. Baldwin would lead seven or eight cars, on a level and straight road, with as great ease as she carries three cars up this road.

The Newcastle and Frenchtown road was next in my way. This road is 16 miles in length, and has been completed and worked with the locomotive engine for the last eighteen months. They have at present four engines on the road, all constructed by R. Stephenson, Newcastle, England; and, with the exception of one, they have worked very satisfactorily. Mr. Young, a very intelligent and practical engineer, who has charge of the engines, informed me that they had lost but two or three trips since they commenced running them. I was much pleased with the organization and police of this road. I passed in company with about a hundred passengers, and the whole time of transshipping them with their baggage, from the steamboat to the cars, to the time we were under-way on the road, did not exceed five minutes, and an equally short period in again transshipping to the boat at the other end of the road. The engine had eight cars in train, and occupied 63 minutes in crossing. The grade of this road is very favorable for this kind of power, the whole being within 16 feet per mile, with the exception of a few yards at each end.

The Baltimore and Susquehanna Railroad is completed, and worked by an engine, 16 miles from Baltimore, passing in almost its whole extent through a very broken and undulating country. The greater part of this road ascends at the rate of 10 feet per mile, and is a continued series of curves, ranging from 400 to 1000 feet radius, and many of these occurring in the ascents. It is consequently a very unfavorable road for the locomotive engine. They have an engine on this road, which burns coke, and was originally on four wheels, by which arrangement it was found impossible to pass the curves, when she was put upon six wheels, similar to the Saratoga, except that her furnace is outside the driving shaft. She is an engine of great capacity, and her weight on the driving wheels has injured both the wooden rail and the iron, very materially. Yet notwithstanding the very bad order of the road, she carried a train of seven cars, round the most abrupt curves, at a speed of eight or ten miles per hour.

The Baltimore and Ohio road has been so frequently described that I shall only refer to the motive power used upon it, which, for the most part, is animal. They have an engine which they work upon the road part of the time. This is a geared engine, communicating her power to the main shaft by a spur wheel. The principal merit of this engine is her success in generating steam with anthracite coal, which is certainly more satisfactory than any thing I have heretofore seen, and fully confirmed my previous opinion, that this fuel will eventually be used for the transportation of passengers, in all cases where it can be obtained at fair rates. The Baltimore Company feel confident of success with this kind of fuel, and have contracted for two or three engines adapted to its use.

The last object of my tour was the Petersburg and Roanoke Railroad, in Virginia. This road is now completed from Petersburg to the Roanoke, a distance of about 60 miles. The grade of the road, with the exception of two or three planes, with an ascent of 27 to 30 feet per mile, is very favorable to the use of the locomotive engine; and their success with this kind of power has not been surpassed in the country. They have now three engines upon the road, a part of which have been at work upwards of nine months, and made their trips with as much regularity as could have been expected from horse power. One of these, the "Liverpool," is probably, for her weight, the most effective engine in the country. This, and one of the other engines on this road, were constructed by Mr. Burry, of Liverpool, who has also furnished two engines for one of the Schuylkill railroads, which I am informed work equally well. The proprietors of this road consider it as part of the great line of communication from north to south, and look to its ultimate connection with the Charleston Railroad, by similar works, through North Carolina.

The opening of the Charleston Railroad to Augusta, which is advertised for the first of October next, in connection with the two lines of steamboats now being established between New-York and Charleston, and between Norfolk and that city, will, with the exception of the short distance from Augusta to Montgomery, complete the facilities of the great line of communication from Boston to New-Orleans, and I venture to predict that, before the expiration of three years, the mail will be transported from this city to New-Orleans in the short space of eight or nine days; and that to avoid the rigors of a northern winter, a trip to the sunny regions of the south will soon become as common as the visits from that quarter to the north are in the summer.

Fearing I have already extended my remarks to a tiresome length, I will not trouble you with a detail of the measurement and proportions of boilers, engines, &c. but cannot refrain from assuring you, that although I was one of the earliest and most strenuous advocates* in this country for the introduction of railroads, and the use of steam as a motive power, the result of all my observations during my journey has more than confirmed the most sanguine hopes I ever entertained of their success.

But the most gratifying part of the details—and that which, as an American citizen, and a member of this great republic, most flatters my vanity—is the proud recollection that the whole of this trip, from the city of New-York to Saratoga, from Saratoga to the interior of Virginia, near the North Carolina line, and thence again to this city, making the distance travelled more than 1500 miles, was performed by railroad and the splendid steamboats which ply on the noble waters of the Hudson, Delaware, Chesapeake Bay, and James river, without any *fatigue* or *sacrifice* of *personal comfort, in the short space of nine days*, including a detention of 96 hours, or four days, at the different places I visited, making the travelling time but *five days* for the *whole distance*.

Yes, Mr. Editor, I think every American citizen may justly feel proud, when he reflects on the rapid progress of these facilities of internal communication, which are so rapidly springing up on every side, and intersecting our country from north to south, and from east to west, forming the great avenues of intercourse with every part of our extended confederation, and which alike strengthen the bonds of our happy union, and give an additional guarantee for the stability and permanency of our government and institutions.

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* I never believed in the practicability of a railroad to the moon—never thought railroads could be worked and kept in repair without great expense; or that, if constructed where there was no business, they would pay large dividends.

LIME.—This is a simple mineral, or a letter in the geological alphabet, and a rock scattered very extensively and in vast deposits over the face of the globe.

Lime appears under a greater variety of solor, texture and form, than any other rock. There are probably two hundred varieties of marble, all, or nearly all of which, are lime. Chalk, with the endless and boundless deposits of the more common limestone, is composed of the same elements. It crystalizes into numerous forms. Calcareous spar, with rhombic sides, is one form; a six sided prism is another; and several others might be named.

Lime exists in exhaustless abundance in almost every country. In many places it is the most common and almost the only rock.

No rock perhaps differs so much in its age, or in the periods in which the different deposits were formed. The oldest limestone was formed before the most recent granite. The most recent deposits are at this time accumulating; so that the formation of limestone has been constantly going on for nearly six thousand years at least, consequently some specimens are about six thousand years old, and perhaps much more, while others have not completed their first year.

The uses of lime are very numerous and very important. In many places it is the common and only material for the walls of houses, the enclosures of farms, &c., and in every place is esteemed for the finest architectural work. It is the most common material for statuary work, and carving of various kinds.

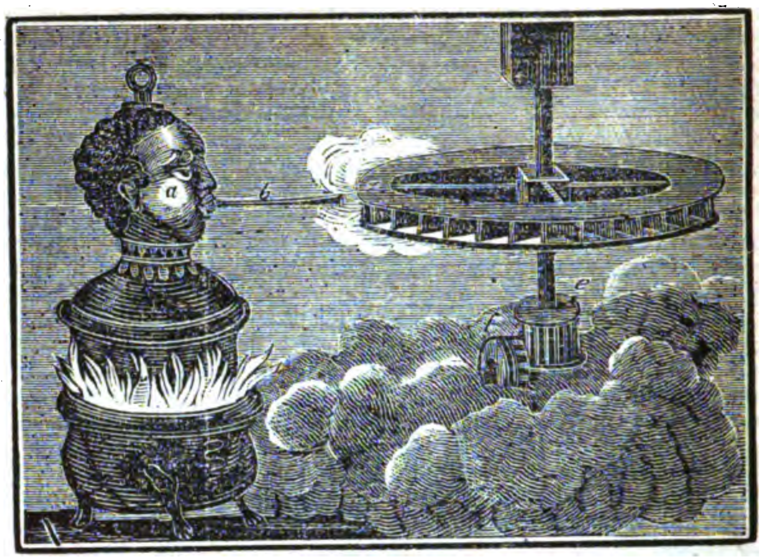
For the interior walls of houses, or for plastering rooms, &c., it is nearly indispensable. Some specimens are of great value for water cements, as they cement the masses of stone in a wall so as to be water tight, and even grow hard under water. This is called hydraulic, or water lime.

Lime when burned has something of an alkaline property, like potash or soda, and is used as a substitute for them. It is used as a flux, or an aid in melting, in the manufacture of the coarser kinds of glass, and in the smelting of iron. It is also used as a medicine.

Upon soils which do not contain a portion of lime, it is a valuable manure. It may be burnt and slacked, or pulverized otherwise, and applied to the land. Marl, which is lime commonly mixed with clay and sand, owes its value as a manure to the lime it contains.

The simple elements of lime are fewer in number than those of the rocks before named. The only elements which compose pure limestone, are oxygen, calcium, carbon, and usually a little hydrogen. Burnt lime is little else than oxygen and calcium; lime in the quarry has oxygen and carbon, or carbonic acid with a little water, or oxygen and hydrogen are added. In the process of burning lime, the carbonic acid and water are driven off, so as to reduce it from a carbonate and hydrate to pure lime, which is oxygen and a metal called calcium.

INFLAMMABLE SPRING.—In the township of Wales, 15 miles from Buffalo, near the bank of a small stream, there issues from a ledge of slate rock a stream of air, which, on the application of a torch, takes fire, and continues to burn till it is extinguished by the rising of the water of the rivulet. The flame is about 6 inches in length, and 2½ in diameter.

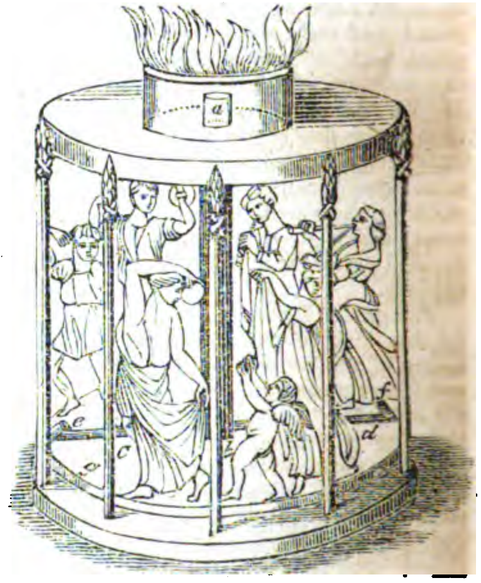


FIRST APPLICATION OF THE POWER OF STEAM TO A USEFUL PRACTICAL PURPOSE.—The first person in modern times who applied the expansive power of steam on any scale to a useful practical purpose, was Giovanni Branca, an eminent Italian mathematician, who resided at Rome in the beginning of the seventeenth century. His contrivance was an œlipile, from which steam issued upon a wheel formed with float-boards or vanes, like a water-wheel or wind-mill, and thus produced a rotatory movement. This wheel, by some intermediate mechanism, gave motion to the stampers of a mill for pounding drugs. The above figure is copied from that given by Branca to explain his invention; but it must be considered only as an ornamental and picturesque illustration of the principle by which he produced the moving power in his stamping-mill; not as a view of any part of the machinery which was actually constructed. *a* is a boiler in the shape of a negro's head. *b*, a pipe proceeding from it, which conducts the steam upon the vanes or boards of a wheel, *x*. Other wheels, *e*, *f*, are attached in the usual manner to communicate the motion in the required direction.*

It is on account of this contrivance that Branca is considered by his countrymen to be the inventor of the steam engine; and even in a recent English work† on this subject, he is allowed the merit of a *first idea.* To this he certainly has no claim; neither can his engine be compared with Hero's for its ingenuity, nor to De Caus's for its efficiency. Besides, long before this period, the same mechanism was described by Cardan, as moved by the "vapor from fire." And the mere substitution of steam by the Italian philosopher is not so original or important, as to give to the transition the rank of an invention. Branca was, however, a man of much ingenuity, and many of his machines are highly creditable to his abilities as a scientific mechanic.

The elasticity of the vapor of water, which had long been known to philosophers, but to them only, had now become familiar to water-work artists; and in their hands it was applied in a variety of ways to their favorite problem of raising water above its level in jets and fountains. Without vouching for the great effects said to be produced by these machines, we will describe two, as necessary to give a clear notion of the value of these conceits, and as specimens of the ingenious absurdities, which, under the name of *Air Engines*, were recommended even by experienced engineers about this period. The machines themselves, under another form, are to be found in the *Spiritalia*. The book from which they are extracted in their present shape was one of some reputation in its day, and many years after its publication it was thought worthy of being translated into English. The translation went through two editions.*—[Stuart.]

The engraving in the preceding page is one descriptive of the first *useful* application of steam. We shall now introduce to the notice of our readers a description of the first recorded observation of its application to produce motion, and although it must be considered as a mere toy, its introduction in our pages will, we hope, not be considered out of place.



FIRST APPLICATION OF STEAM POWER.—Although the elastic power of the vapor of water must have been familiar to man from the earliest period of his history, the first recorded observation of the fact, and the application of steam to generate motion, appear to have been made by a Greek mechanic, about one hundred and thirty years before the Christian era.

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* Branca's account of his contrivance is contained in a folio volume of machines, which he dedicated in 1628 to a M. Canci, Governor of Loretto. It was published at Rome in 1629, under the title of "Le Machine Diverse del Signior Giovanni Branca." Our engraving is contained in Plate XXV of that collection.

† Partington's Historical Account of the Steam Engine. London, 1822.

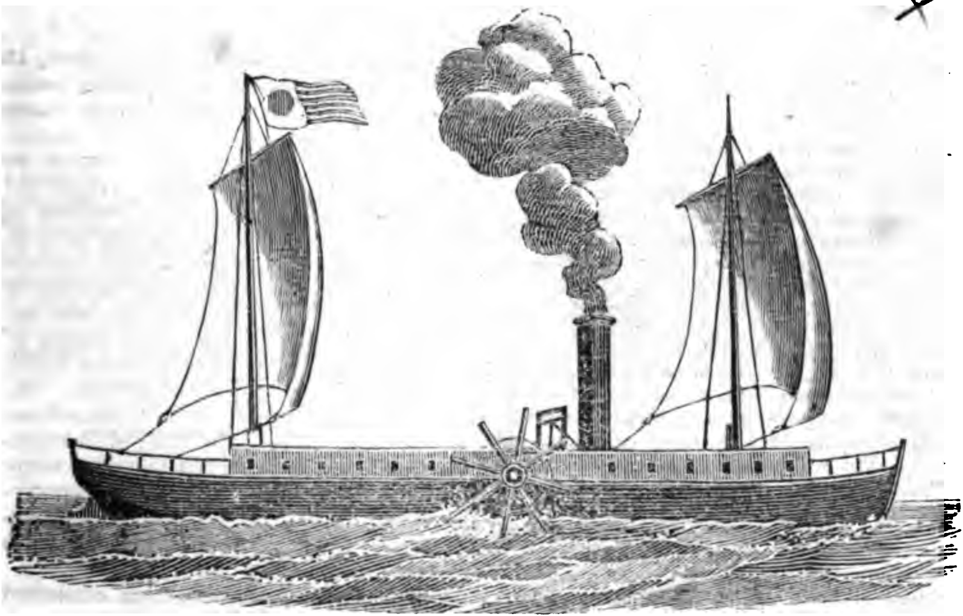
* "New and Useful Inventions for Water Works: a work both useful and delightful for all sorts of people; translated into English by John Leak." The plates appear to have been those used in the French edition.

Hero the Elder, who flourished at Alexandria in the reign of Ptolemy Philadelphus, was eminently distinguished in that age and region of refinement, not only for the extent of his attainments in the learning of the time, but also for the number and ingenuity of his mechanical inventions. In one of his books, he deduced all the laws of what are called the mechanical powers from the properties of the lever. His *Spiritalia*, or Pneumatica, contains the first account of the forcing pump : of a fountain, still known by his name, in which water is elevated in a jet by the elasticity of condensed air. Among other contrivances in the same treatise, he describes two machines of his invention; in one of which a rotatory motion is produced by the emission of heated air; and a similar movement is imparted to the other by the reaction of vapor rising from boiling water.

A pipe, *a*, is directed by Hero to be inserted under the hearth of an altar, on which a fire is burning. This pipe, placed in a vertical position, is moveable on a pivot, *b*, resting on the base of the altar. Two other pipes, *c*, *d*, of smaller diameter, proceed from the vertical one in a horizontal direction, having their extremities, *e*, *f*, open and turned upwards. A base or drum, *g*, is attached to the pipes, on which are placed small figures in various attitudes. The air at the upper extremity of the vertical pipe being heated by contact with the under side of the altar hearth, is expanded, and descends into the pipe, and proceeding along the horizontal arms is expanded, at their orifices, *e*, *f*. This causes them to revolve round the pivot *b*, so that the figures which are placed on the base *g*, are carried around with and appear "to lead the dance, as if they were animated beings."

It is scarcely necessary to notice the identity of this elegant apparatus with that of Barker's mill; and that the rotatory motion would be produced, as stated by Hero, though not by the *emission* of *warm*, but through the *admission of cold* air at the orifices in the horizontal arms, in consequence of the rarefaction at the upper end of the vertical pipe under the hearth of the altar. —[Stuart.]

In addition to the foregoing descriptions of the "First Application of Steam," and the "First Useful Application of it," we now insert a cut of Mr. Fulton's first boat, (the *North River, or Clermont*,) which we copy from a drawing made by himself, and which may be considered as descriptive of the *first successful application of steam in navigation*.



The following boats were built under the superintendance of Fulton, or according to his plan, during his life-time :

	Names.	*Tonnage.*	*Where employed.*
1806	North River, or Clermont	160	Hudson river
1807	Rariton	120	Rariton river
1807	Car of Neptune	295	Hudson river
1811	Paragon	331	Hudson river
1812	Fire-Fly	118	From New-York to Newburgh
1812	Jersey Ferry Boat	—	Ferry Company
1813	Richmond	370	Hudson river
1813	Washington	275	Potomac river
1813	York Ferry Boat	—	Ferry Company
1813	Nassau Ferry Boat	—	Brooklyn Company
1813	Fulton	327	Long Island Sound
1814	Fulton the First	2475	Navy Yard
1816	Olive Branch	—	Between New York & New Brunswick
1816	Emperor of Russia	330	Undetermined
1816	Chancellor Livingston	526	Hudson river.

For a description of Mr. Fulton's first trip, see Vol. II. page 291, of the Railroad Journal.

Since the above was in type, Captain Davis Hunt, who was the commander of the boat, has seen the engraving, and pronounces it correct in every particular.

Babbage on the Economy of Manufactures.

[Continued from page 553.]

214. Another event which has arisen, in one trade at least, from the employment of large capital, is, that a class of middle-men, who were formerly interposed between the maker and the merchant, now no longer exist. Formerly, when calico was woven in the cottages of the workmen, there existed a class of persons who travelled about and purchased the pieces so made, in large numbers, for the purpose of selling them to the exporting merchant. But the middle-man was obliged to examine each piece, in order to know that it was perfect, and of full measure. Now, although the greater part of the workmen might be depended upon, yet the fraud of the few would render this examination indispensable: for the value of character, though great in all circumstances of life, can never be so fully experienced by persons possessed of small capital, as by those employing much larger sums. Any single cottager, if he were detected by one purchaser, might hope that the fact would not become known to all the rest; whilst the larger the sums of money for which any merchant deals, the more is his character for punctuality studied and known by others. Thus it happens that high character supplies the place of an additional portion of capital; and the merchant, in dealing with the great manufacturer, is saved from the expense of verification, by knowing that the loss, or even the impeachment, of the manufacturer's character, would be attended with greater pecuniary detriment to himself than any profit upon any single transaction could compensate.

215. To such an extent is this confidence in character carried, that, at one of our largest towns, sales and purchases on a very extensive scale are made daily in the course of business without any of the parties ever exchanging a written document. The amount of well-grounded confidence, which such a practice indicates, is one of the many advantages an old manufacturing country always possesses over its rivals.

216. A breach of confidence of this kind, which might have been attended with very serious embarrassment, occurred in the recent expedition to the mouth of the Niger.

"We brought with us from England," Mr. Lander states, "nearly a hundred thousand needles of various sizes, and amongst them was a great quantity of '*Whitechapel Sharps*,' warranted '*superfine, and not to cut in the eye*.' Thus highly recommended, we imagined that these needles must have been excellent indeed; but what was our surprise, some time ago, when a number of them which we had disposed of were returned to us, with a complaint that they were all eyeless, thus redeeming with a vengeance the pledge of the manufacturer, 'that they would not cut in the eye.' On an examination afterwards, we found the same fault with the remainder of the 'Whitechapel Sharps,' so that to save our credit we have been obliged to throw them away."*

217. The influence of established character in producing confidence operated in a very remarkable manner at the time of the exclusion of British manufactures from the Continent during the last war. One of our largest establishments had been in the habit of doing extensive business with a house in the centre of Germany; but, on the closing of the continental ports against our manufactures, heavy penalties were inflicted on all those who contravened the Berlin and Milan decrees. The English manufacturer continued, nevertheless, to receive orders, with directions how to consign them, and appointments for the time and mode of payment, in letters, the handwriting of which was known to him, but which were never signed, except by the Christian name of one of the firm, and even in some instances they were without any signature at all. These orders were executed; and in no instance was there the least irregularity in the payments.

218. Another circumstance may be noticed, which to a small extent is more advantageous to large than small factories. In the export of several articles of manufacture, a drawback is allowed by government, of a portion of the duty paid on the importation of the raw material. In such circumstances, certain forms must be gone through in order to protect the revenue from fraud; and a clerk, or one of the partners, must attend at the custom-house. If the quantity exported is inconsiderable, the small manufacturer frequently does not find the drawback will repay him for his loss of time; whilst the agent of the large establishment occupies nearly the same time in receiving a drawback of several thousands, as the smaller exporter does of a few shillings.

219. In many of the large establishments of our manufacturing districts, substances are employed which are the produce of remote countries, and which are, in several instances,

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* Lander's Journal of an Expedition to the Mouth of the Niger, vol ii. . p. 42.

almost peculiar to a few situations. The discovery of any new locality, where such articles exist in abundance, is a matter of great importance to any establishment consuming them largely; and it has been found, in some instances, that the expense of sending persons to great distances, purposely to discover and to collect such produce, has been amply repaid. Thus it has happened that the snowy mountains of Sweden and Norway, as well as the warmer hills of Corsica, have been almost stripped of one of their vegetable productions, by agents sent expressly from one of our largest establishments, for the dying of calicoes. It is owing to the same command of capital, and to the scale on which the operations of a large factory are carried, that their returns will admit of the expense of sending out agents to examine into the wants and tastes of distant countries, as well as of trying experiments, which, although profitable to them, would be ruinous to smaller establishments possessing more limited resources.

These opinions have been so fully expressed in the Report of the Committee of the House of Commons on the Woollen Trade, in 1806, that we shall close this chapter with an extract, in which the advantages of great factories are summed up.

"Your Committee have the satisfaction of seeing that the apprehensions entertained of factories are not only vicious in principle, but they are practically erroneous; to such a degree, that even the very opposite principles might be reasonably entertained. Nor would it be difficult to prove that the factories, to a certain extent at least, and in the present day, seem absolutely necessary to the well-being of the domestic system; supplying those very particulars wherein the domestic system must be acknowledged to be inherently defective; for it is obvious, that the little master manufacturers cannot afford, like the man who possesses considerable capital, to try the experiments which are requisite, and incur the risks, and even losses, which almost always occur, in inventing and perfecting new articles of manufacture, or in carrying to a state of greater perfection articles already established. He cannot learn, by personal inspection, the wants and habits, the arts, manufactures, and improvements, of foreign countries; diligence, economy, and prudence, are the requisites of his character, not invention, taste, and enterprize; nor would he be warranted in hazarding the loss of any part of his small capital. He walks in a sure road as long as he treads in the beaten track; but he must not deviate into the paths of speculation. The owner of a factory, on the contrary, being commonly possessed of a large capital, and having all his workmen employed under his own immediate superintendance, may make experiments, hazard speculation, invent shorter or better modes of performing old processes, may introduce new articles, and improve and perfect old ones, thus giving the range to his taste and fancy, and thereby alone enabling our manufacturers to stand the competition with their commercial rivals in other countries. Meanwhile, as well worthy of remark, (and experience abundantly warrants the assertion,) many of these new fabrics and inventions, when their success is once established, become general among the whole body of manufacturers; the domestic manufacturers themselves thus benefitting, in the end, from those very factories which had been at first the objects of their jealousy. The history of almost all our other manufactures, in which great improvements have been made of late years, in some cases at an immense expense, and after numbers of unsuccessful experiments, strikingly illustrates and enforces the above remarks. It is besides an acknowledged fact, that the owners of factories are often amongst the most extensive purchasers at the halls, where they buy from the domestic clothier the established articles of manufacture, or are able at once to answer a great and sudden order; while, at home, and under their own superintendance, they make their fancy goods, and any articles of a newer, more costly, or more delicate quality, to which they are enabled by the domestic system to apply a much larger proportion of their capital. Thus, the two systems, instead of rivalling, are mutual aids to each other; each supplying the other's defects, and promoting the other's prosperity."

ITHACA AND OWEGO RAILROAD.—We are indebted to Richard Varick De Witt, Esq., for the following letter from the Engineer in Chief, showing a most satisfactory state of things as regards this important work:

ITHACA, September 5, 1833.

DEAR SIR,—The work upon the Ithaca and Owego Railroad is rapidly advancing to completion. The grading of upwards of half the length of the road is prepared for laying the railway, and the grading of the remaining 28¾ miles in length of road is expected to be completed in the month of November, except some deep cuttings, &c. amounting together to about a mile and a half, which is not expected to be completed till January. Nothing has yet transpired to change the opinion I gave you some time ago, viz.: that we expected to have the railway ready for use, the whole distance from Ithaca to Owego, by the beginning of March next—and what must be equally interesting information, that the 28¾ miles of single track, and 5 miles of sidelings and turn-outs, will be completed for use for the $300,000 capital of the company.

We are now laying down nearly a mile of railway per week. All the railroad iron for our road (750 tons) is purchased, and a large portion of it has arrived at this place. It has cost us only $54 62½ per ton, delivered here, viz.:

$45 per ton delivered by A. & G. Ralston at Philadelphia—$2 12½ transportation from Philadelphia to Albany—$7 50 toll and transportation from Albany to Ithaca, on the Erie Canal, Cayuga Lake—Total $54 62½.

By this purchase I have reduced the cost of this item upwards of $2,500.

We have now 20 railroad cars employed upon this road—30 more have contracted to be delivered by Messrs. Bonney & Co., of Wilmington, Delaware. Part of them were shipped, and are daily expected to arrive; the whole are expected to arrive within three weeks.

Both furnaces at this place, (Messrs. Conrad & Co. and Dennis Vail & Co.) and Mr. Seymour, at Utica, have made us some very good railroad cars, and both furnaces at this place are actively employed completing their contract to supply us with *three* cars *each* per week. We will probably have from 70 to 80 cars in use upon the road in less than two months. Eight cars are now employed upon the inclined plane removing the rock excavation.

The stone building for the engine house at the head of the first plane has been commenced. The walls of this building (120 feet in length, 60 feet in breadth, and 30 feet in height) are to be completed by the last of November. The stone delivered at the building will cost us only from 50 to 62½ cents per perch. Upwards of one-third of the whole quantity wanted for the building has been obtained from the road excavations.

The country is perfectly healthy—there is no sickness among the workmen. Board is cheap.

The present force upon the road, including laborers, carpenters, masons, and other mechanics, amounts to upwards of one thousand, and is daily increasing.

The present wages for laborers is from 13 to $14 per month and found. Carpenters from $1,25 to $1,50 per day. Masons from $1,25 to $1,75 per day. Two-horse wagons $2,00. And one-horse carts $1,50 per day.

We expect to transport next spring, across our railroad, a large amount of articles to the Philadelphia and Baltimore market by the way of the Susquehanna river, before the Erie canal is free from ice.

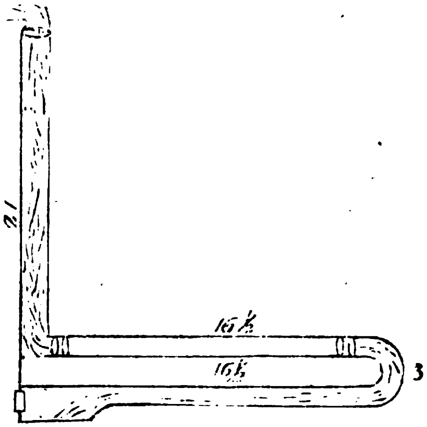
Very encouraging offers have already been made to us, by forwarding agents, to transport plaster, timber, &c. across our road next winter and spring, for Southern markets.

There can be no doubt but that a large portion of the production of the West will be taken to the Baltimore and Philadelphia markets, by way of the Susquehanna river, as soon as this railroad is completed, and until the New-York and Erie railroad is made, which will connect with this railroad at Owego.

I am, dear sir, very respectfully your obedient servant, JOHN RANDL, Jr.

Richard Varick Dewitt, Esq. Treasurer of the Ithaca & Owego Railroad Company.

STEAMBOAT ON THE SUSQUEHANNA.—We have at length succeeded in obtaining the following description of the above boat:



Length, 95 feet; beam, 18 do.; draft, 15 inches; power, 35 horse. Length of boiler and height of chimney, see diagram above.

The flame from an open burning bituminous coal, after enveloping the boilers 35 feet, we are informed is easily brought out from the top of the chimney, a distance of 56½ feet. Since the introduction of coal, two tons supply the place of eight cords of pine wood. It has been for some time known to the public, that a steamboat has been navigating some of the most rapid waters of the west branch of the Susquehanna during the present season, with entire success. The result of this enterprize is justly considered of great importance to the State of Pennsylvania. It now appears that there are many hundred miles above the public improvements, which may be navigated by steamboats, calculated to draw an up-river trade into the State canals.

There is another circumstance connected with this business, which is highly important to Pennsylvania, and to the Atlantic frontier generally. After a full trial, it is ascertained that a very small quantity in bulk of an open burning bituminous coal will answer every purpose for generating steam to propel boats, locomotive, and other steam engines. All the trials of bituminous coal for the above purpose, in New-York and elsewhere in the United States, have heretofore been unsuccessful, in consequence of confining the heat and flame, thereby melting the grates, and preventing the flame from reaching and acting on the surface of the boilers. The error was in selecting the materials. All these difficulties are removed by the introduction of the above species of coal, which is almost free from bituminous smell. We believe we shall shortly see our locomotive engines propelled by a small quantity of this material, bringing from Columbia thousands of tons for our manufacturers. This is a new product of Pennsylvania. Let our neighbors of New-York and other states, who are now complaining of the price of wood, consider for a moment from where a substitute is to come, to propel their steamboats and other machinery: they will find it in the open burning bituminous coal of Pennsylvania.—[Phil. C. Her.]

Large Holly Tree.—Taking a walk with some friends a few days since in Stafford county, Virginia, we came across a large and elegant green tree, which we were told was a holly. It seemed almost incredible from its size, as the holly, though a native of America, rarely attains to more than a foot diameter, through the trunk. Upon approaching we found it to be the true American holly, or *Ilex Opaca*, which, measured at two feet from the surface of the ground, was seven feet six inches in circumference, or more than two feet in diameter. This tree is situated immediately on the new mail road from Potomac Creek to Fredericksburg, and but a few yards from the present road, about half a mile from the landing, and is well worthy of notice, as I have never heard of a holly growing to such a size in this country.—[National Intelligencer.]

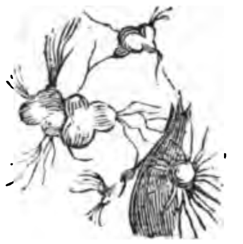
Noise of the Anvil—*A Simple and Useful Invention.*—An Italian blacksmith has successfully practised a very simple contrivance to diminish considerably the loud noise occasioned by the percussion of the anvil. It is merely to attach a piece of iron chain to one of the horns of the anvil, which carries off a portion of the usual acute sound. But Sig. G. Visini Asso, in the province of Coma, has introduced an improvement to this by adding a spring to the basis of the anvil, which, (keeping the chain stretched,) diminishes the sound in a much greater degree; and it is equally easy to remove the ring of the chain from the horn of the anvil by a mere blow of the hammer.—[N. Y. Daily Advertiser.]

Notes on Mildew, from a Lecture on that Subject, by Professor Lindley, delivered at the Horticultural Society's Meeting Room, on the 24th of April. By J. W. L. [From Loudon's Gardener's Magazine.]

[Continued from page 569.]

It is a vulgar error to suppose that a berberry tree (*Berberis* vulgaris *L.*), if planted in a corn field, will, if infected with mildew, communicate the disease to the corn. This cannot be the case, as the mildew which attacks the berberry is quite different from any of the fungi which are found on corn. The berberry mildew, when magnified, is found to consist of a number of small orange cups, with white films over each. When ripe, these lids burst, and the top of the cup assumes a ragged uneven appearance, like white fungi. Each cup has within it a number of little boxes containing seeds. The mildew on the pear tree is called Æcidium cancellatum. It first appears like mucus, but consists of a number of hairy substances. These hairs, when magnified, appear like a collection of granules of a bulbous shape, each containing a number of balls connected by strings. These balls, though so minute as to be scarcely perceptible by the eye, are yet only receptacles for seed. This is a most destructive fungus: it always seizes on the veins of the leaves, which afterwards turn yellow and fall off; the branches next wither, and in two or three years a whole orchard is destroyed. Mr. Knight, in 1832, suffered severely from this fungus, and has tried many experiments respecting its cure. Hawthorn trees are attacked by a fungus which at first appears merely a point made by an insect, but afterwards looks like fungi (Æcidium laceratum *Dec.*) The sycamore fungus is a black spot, consisting of oblong purplish bodies, yellow inside, and containing tubes filled with seeds. Æcidium Grossulariæ *Dec.* attacks gooseberry bushes, and Æcidium cornutum the mountain ash: both spread rapidly, and are very difficult to cure. The ergot on the rye is a well known and very destructive species of mildew. It partakes of the nature of the truffle, and grows out of a spike of corn like a prolonged kernel. It is long, horny, and cartilaginous; and it consists of fibres closely interlaced. This disease evidently originates in the centre of the stem. It affects maize, various species of grass, and is often found in plants of yellow gentian, &c.

The principal fungi of the third class, or those which attack the roots of plants, are two; and both closely resemble truffles. One of these (Rhizoctonia Crocorum), which is of a brownish yellow, attacks crocuses; and in those countries where the crocus is cultivated for its saffron, as an article of commerce, it makes great ravages. It is called by the French *la mort du safran*, and soon destroys a whole crop. The other fungus, Periola tomentosa, is found on the potato, lucerne, &c. It turns the roots, which are naturally white, of a purplish hue. Its ravages are often attributed to grubs. Both these fungi appear to be propagated by spawn, or fibres which spread through the earth, and cling round the roots which they find in their way.



Having given a rapid sketch of some of the principal kinds of fungi which produce mildew, Dr. Lindley proceeded to speak of the causes which produce them, and of their cure. All are very easily propagated, from the rapidity with which they arrive at maturity, and the immense number of seeds which they produce. Most of the mildew fungi require only twenty-four hours from the first springing of the plant to the ripening of its seed; and the number produced by each may be guessed from the circumstance of one mushroom being sufficient to propagate 250,000,000. The extreme minuteness of the mildew fungi renders them still more numerous. The first class, or the superficial mildew, appears to be communicated by the air, the seeds when ripe being carried by it from one plant to another, and establishing themselves wherever they touch. They destroy a plant by covering the surface of its leaves, and thus preventing respiration. Plants are generally most affected by superficial fungi after a long drought, when the fibres of their roots are unable to imbibe sufficient moisture from the soil, and the plant thus becomes debilitated, and affords an easy prey to the parasite which attacks it: as a proof, Dr. Lindley mentioned that in Scotland, where there are heavy night dews, this fungus is unknown. The cure seems to be abundant watering. Dr. Lindley mentioned a case of some onions, in the gardens of the Society at Chiswick, which were attacked by this fungus. These onions had been transplanted, and their roots were consequently so much weakened as to be unable to imbibe a sufficient quantity of moisture. Dr. Lindley had the plants abundantly watered, which, though it did not cure the infected plants, appeared completely to arrest the progress of the disease. Other onions, not transplanted, were not attacked. A correspondent of this magazine, Mr. Haycroft, recommends a mode of curing this mildew, which appears to be effectual, by cutting off the infected branches, washing the walls with a composition, and removing the infected nails, &c. Sulphur has also been recommended, but is not found to answer.

The internal mildew evidently cannot be communicated by the air, since it always appears to spring from the interior of the plant, and to be at first covered with a thin skin, from which it does not burst till it is ripe. It is impossible, therefore, that this kind of mildew can be communicated externally, and yet the fact that it is contagious is so clear as not to admit a doubt. The only manner in which it appears probable that it can reach the interior is through the roots. The seeds, when ripe, fall upon the earth, which becomes contaminated by them, and they are sucked up by the spongioles of the roots. Mr. Dovaston has also held this opinion. The correctness of this hypothesis is proved by sowing clean seeds in infected soil; and the young plants from these seeds springing up with the disease upon them. The circumstance of its always attacking the most vigorous plants is thus also explained, as it is evident that the more rapid the circulation the greater is the probability of extraneous substances being drawn up with the moisture imbibed by the roots. It is also clear that, in this case, water must aggravate the disease; as, by exciting the plant to suck it up, it would increase the danger of the seeds of the fungi being drawn in with it. This was also the reason that Mr. Errington found that burying his celery roots only made the mildew spread more rapidly. The only cure for this fungus seems to be that adopted by Mr. Knight with his pear trees, viz., taking them up, washing the roots quite clean, from every particle of soil, and then replanting them in quite a different part of his grounds.

Red plants are said to be more liable to mildew than any other. Red is, indeed, supposed by some always to indicate a morbid action, as it shows that the plant is unable to absorb carbonic acid gas from the atmosphere, which is necessary to its perfect health; at all events, it is a proof of disease when leaves, or any other parts of a plant, not naturally red, assume that color. Other experiments have been made for curing, or at least preventing the spread of, the internal mildew; and Mr. Bauer has found that steeping grains of corn in lime-water will produce the desired effect. There appears no cure for mildew in the roots, but by cutting a deep trench round the infected plants, and cutting off all communication between them and the rest of the field.

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LITERARY NOTICES.

Journal of two Voyages along the Coast of China, in 1831 and 1832, &c. &c. by Charles Gutzlaff. 1 vol. New York: John P. Haven.—This is, in many particulars, a remarkable book. It is written by a Prussian, educated as a physician, but whose attention being turned to the mission cause, "left his home and the most inviting prospects of even royal patronage, to commence the labors of a missionary in Eastern Asia." To discharge those with the more effect, he studied diligently, and acquired, the Chinese language,—at least one of its many dialects,—adopted the Chinese dress, queue and all, and adapted himself to their manners, as far as it could be done without sanctioning, or ever seeming to sanction, the licentiousness with which they are too much blended. So completely was he enabled by these means, and the currency which his skill as a physician gave him, to pass among this strange people as one of them, that he only did not reach Pekin in his first voyage (having approached within two days' journey of it) because the dialect spoken in the province through which he had to pass was different from that he had previously acquired, and he had not then the time nor opportunity to learn it. Perhaps no better insight can be given, into the character of this interesting traveller, than by the following extract from his journal, describing his longing and his motives for visiting Peking:

My anxiety was greatly inncreased by our approach to Peking. A visit to the capital of the Chinese Empire—an object of no little solicitude, after many perils, and much loss of time,—was now near in prospect. How this visit would be viewed by the Chinese government, I knew not; hitherto they had taken no notice of me; but a crisis had now come; as a missionary anxious to promote the welfare of my fellow creatures, and more willing to be sacrificed in a great cause, than to remain an idle spectator of the misery entailed on China by idolatry, I could not remain concealed at a place where there are so many mandarins,—it was expected that the local authorities would interfere. Almost friendless, with small pecuniary resources, without any personal knowledge of the country and its inhabitants, I was forced to prepare for the worst. Considerations of this kind, accompanied by the most reasonable conjecture, that I conld do nothing for the accomplishment of the great enterprise, would have intimidated and dispirited me, if a power from on High had not continually and graciously upheld and strengthened me. Naturally timid, and without talent and resources in myself, yet by divine aid—and by *that* alone,—I was foremost in times of danger, and to such a degree, that the Chinese sailors would often call me a bravado.

The enthusiasm in a great cause here evinced, was nevertheless tempered by that sagacity and knowledge of human nature, which seeks to accomplish its ends by a skilful use of the ordinary means within its power; and which, though acting in obedience to the will of God, looks not for aid to any miraculous interposition.

From these pages of Mr. Gutzlaff more information is to be derived of the true character of the Chineses, we think, than from any other that we know; and they will be perused with interest, we are sure, by the Christian, who desires to see the light of the gospel spread to the remotest corners of the earth—by the man of letters—and not least by the merchant, seeking information as to new fields for his operations. The whole book inculcates throughout, the practicability of establishing intercourse with the Chineses, and enlarges upon the advantages in every sense that would result from it.

The first of these voyages was made in a Chinese junk; the second in a British East India ship, the Lord Amherst. We shall have occasion to return to this book in some future observations on the commercial importance of the regions it describes. We will now only add some extracts from it.

The Chineses are idolators, and of course superstitious. The propitiations of the "Queen of Heaven," related in the annexed account of the rites observed on the sailing of a junk, and in stress of weather, show how little human reason alone avails to make men wise:

The most distinguishing thing on board a junk is idolatry, the rites of which are performed with the greatest punctuallity. The goddess of the sea is Ma-tsoo-po, called also Teen-how, "queen of heaven." She is said to have been a virgin, who lived some centuries ago in Fuhkeen, near the district of Fuhchow. On account of having with great fortitude, and by a kind of miracle, saved her brother who was on the point of drowning, she was deified, and loaded with titles, not dissimilar to those bestowed on the Virgin Mary. Every vessel is furnished with an image of the goddess, before which a lamp is kept burning. Some satellites, in hideous shape, stand round the queen, who is always represented in a sitting posture. Cups of tea are placed before her, and some tinsel adorns her shrine.

When a vessel is about to proceed on a voyage, she is taken in procession to a temple, where many offerings are displayed before her. The priest recites some prayers, the mate makes several prostrations, and the captain usually honors her by appearing in full dress before her image. Then an entertainment is given, and the food presented to the idol is greedily devoured. Afterwards the good mother, who does not partake of the gross earthly substance, is carried in front of a stage, to behold the minstrels, and to admire the dexterity of the actors; thence she is brought back, with music, to the junk, where the merry peels of the gong receive the venerable old inmate, and the jolly sailors anxiously strive to seize whatever may happen to remain of her banquet.

The care of the goddess is intrusted to the priest, who never dares to appear before her with his face unwashed. Every morning he puts sticks of burning incense into the censer, and repeats his ceremonies in every part of the ship, not excepting even the cook's room. When the junk reaches any promontory, or when contrary winds prevail, the priest makes on offering to the spirit of the mountains, or of the air. On such occasions, (and only on such,) pigs and fowls are killed. When the offering is duly arranged, the priest adds to it some spirits and fruits, burns gilt paper, makes several prostrations, and then cries out to the sailors, "follow the spirits," who suddenly rise and devour most of the sacrifice. When sailing out of the river, offerings of paper are constantly thrown out near the rudder. But to no part of the junk are so many offerings made as to the compass. Some red cloth, which is also tied to the rudder and cable, is put over it; incense sticks in great quantities are kindled; and gilt paper, made into the shape of a junk, is burnt before it. Near the compass, some tobacco, a pipe, and a burning lamp are placed, the joint property of all; and hither they all crowd to enjoy themselves.—When there is a calm, the sailors generally contribute a certain quantity of gilt paper, which, pasted into the form of a junk, is set adrift. If no wind follows, the goddess is thought to be out of humor, and recourse is had to the demons of the air. When all endeavors prove unsuccessful, the offerings cease, and the sailors wait with indifference.

Such are the idolatrous principles of the Chinese, hat they never spread a sail without having conciliated the favor of the demons, nor return from a voyage without showing their gratitude to their tutelar deity. Christians are the servants of the living God; who has created the heavens and the earth; at whose command the winds and the waves rise or are still; in whose mercy is salvation, and in whose wrath is destruction; how much more, then, should they endeavor to conciliate the favor of the Almighhty, and to be grateful to the Author of all good! If idolators feel dependant on superior beings; if they look up to them for protection and success; if they are punctual in paying their vows; what should be the conduct of nations, who acknowledge Christ to be their Saviour? Reverence before the name of the Most High; reliance on his gracious protection; submission to his just dispensations; and devout prayers, humble thanksgiving, glorious praise of the Lord of the earth and of the sea, ought to be habitual on board our vessels; and if this is not the case, the heathen will rise up against us in judgment, for having paid more attention to their dumb idols, than we have to the worship of the living and true God.

The self-denial, courage and perseverance of the traveller himself, may be judged, in some degree, by his consenting to embark in one of these junks, with such accommodations and such companions as are enumerated below:

When I got on board, my cabin in the steerage, was pointed out to me; it was a hole only large enough for a person to lie down in, and to receive a small box. I had six fellow-passengers. One of them, a captain sixty years of age, was obliged to become a passenger, because his own junk was unseaworthy, having sprung a leak whilst moored in Meinam. He was my declared enemy; a master in opium-smoking; (using the drug to the amount of about one dollar per day;) a man thoroughly versed in all sorts of villainy; and averse to the instruction of his countrymen; though, at the same time, he was well aware of the superiority of Europeans, and knew the value of their arts. His son was an insolent youth, well trained for mercantile transactions; and anxious to amass wealth; he became my friend and neighbor. My mercantile friend, already mentioned, had a cabin beneath mine. He was remarkable for deceitfulness, loquacity, childish pride, and unnatural crime. His companion in trade was wealthy, self-sufficient, and debauched, but polite. In the practice of wickedness and deceit, no one was superior to captain Fo, another of my fellow passengers. This man had formerly been in command of a Siamese junk, bearing tribute to China, and was shipwrecked on the coast of Pulo Way. On his release from the island, he returned to Bankok. Being skilful in various sorts of workmanship, especially in painting and mechanics, he at length gained so much property, that he was able, this year, to put some hundred peculs of goods on board a junk, and to proceed to China, where he had two wives still living. He was devoted to opium, and prone to lying, but, according to his own declaration, my best friend.

Our captain, Sin-shun, was a friendly man, well versed in the art of Chinese navigation; but, unhappily, long habituated to opium-smoking. His younger brother showed himself to be a man of truth; he was my private friend and associate in every sort of trouble. One of the captain's brothers-in-law was the clerk; he denominated himself (from the moment I stepped on board,) my younger brother; paid attention to the instructions of the Gospel; and abstained from every sort of idolatry. The pilot claimed cousinship with me, being (as he said) of the same clan. He was little versed in the art of navigation, but had never been so unlucky as to sail his junk on shore. He was a man of a peaceful temper, a yielding disposition, and a constant object of raillery to the sailors. To all his good qualities, he added that of opium-smoking, in which art he had made considerable proficiency. His assistant was quarrelsome, but more attentive to the navigation than any other individual on board: and he also, as is the case with almost all the pilots, was trained up to the use of the drug; after having inspired the delicious fumes, he would often, against his inclination, sleep at his watch. All the principal persons, on whom depended the management of the vessel, partook freely of this intoxicating luxury; by which they were alternately, and sometimes simultaneously, rendered unfit for service.

When I embarked, though in a very feeble state of body, I cherished the hope, that God, in his mercy, would restore me again to health, if it were his good pleasure to employ in his service a being so unworthy as myself—the least, doubtless, of all my fellow-laborers in the Chinese mission. I took with me a large quantity of Chinese books, and a small stock of medicines,—the remnant of a large remittance made, not long before, by some kind English friends. I was also provided with some charts, a quadrant and other instruments to be used in case of emergency. Long before leaving Siam, I became a naturalized subject of the Celestial Empire, by adoption into the clan or family of Kwo, from the Tung-in district in Fuhkeen. I took, also, the name Shih-lee,—wore, occasionally, the Chinese dress, and was recognized (by those among whom I lived,) as a member of the great nation. *Now*, I had to conform entirely to the customs of the Chinese, and even to dispense with the use of European books.

We conclude for the present with the following description of *Teen-tsin*, a thriving commercial city far up the river *Pee-ho*, and within two days' journey of Peking:

The trade of Teen-tsin is quite extensive. More than five hundred junks arrive annually from the southern ports of China, and from Cochin-China, and Siam. The river is so thronged with junks, and the mercantile transactions give such life and motion to the scene, as strongly to remind one of Liverpool. As the land in this vicinity yields few productions, and the capital swallows up immense stores, the importations required to supply the wants of the people, must be very great. Though the market was well furnished, the different articles commanded a good price. In no other port of China is trade so lucrative as in this; but no where else are so many dangers to be encounted. A great many junks were wrecked this year; and this is the case every season;* and hence the profits realized on the whole amount of shipping, are comparatively small. Teen-tsin would open a fine field for foreign enterprise; there is a great demand for European woollens, but the high prices which they bear, prevent the inhabitants from making extensive purchases. I was quite surprised to see so much sycee silver in circulation. The quantity of it was so great, that there seemed to be no difficulty in collecting thousands of taels, at the shortest notice.—A regular trade with silver is carried on by a great many individuals. The value of the tael, here, varies from thirteen to fourteen hundred cash. Some of the firms issue bills, which are as current as bank-notes in England. Teen-tsin, possessing so many advantages for commerce, my very safely be recommended to the attention of European merchants.

By inquiries, I found, that the people cared very little about their imperial government. They were only anxious to gain a livelihood and accumulate riches. They seemed to know the emperor only by name, and were quite unacquainted with his character. Even the military operations in western Tartary were almost unknown to them. Nothing had spread such a consternation amongst them as the late death of the heir of the crown, which was occasioned by opium-smoking. The emperor felt this loss very keenly. The belief that there will be a change in the present dynasty is very general. But in case of such an event, the people of Teen-tsin would hear of it with almost as much indifference, as they would the news of a change in the French government. The local officers were generally much dreaded, but also much imposed upon. They are less tyrannical here, in the neighbourhood of the emperor, judging from what the people told me, than they are in the distant provinces. When they appear abroad it is with much pageantry, but with little real dignity. Indeed, I saw nothing remarkable in their deportment. No war junks, nor soldiers were to be met with,—though the latter were said to exist. To possess fire-arms is a high crime, and the person found guilty of so doing, is severely punished. Bows and arrows are in common use. There are no military stores; but stores of grain. The grain junks were, at this season, on their return home.

The features of the inhabitants of this district more resemble the European, than those of any Asiatics I have hitherto seen. The eye had less of the depressed curve in the interior angle, than what is common, and so characteristic, in a Chinese countenance. And, as the countenance is often the index of the heart, so the character of these people is more congenial to the European, than is that of the inhabitants of the southern provinces. They are not void of courage; though they are too grovelling to undertake any thing arduous or noble, and too narrow-minded to extend their views beyond their own province and the opposite kingdom of Corea. They are neat in their dress; the furs which they wear are costly: their food is simple; and they are polite in their manners. The females are fair, and tidy in their appearance,—enjoy perfect liberty, and walk abroad as they please.

Texas—Observations historical, geographical and descriptive, in a series of letters, by Mrs. Mary Austin Holley. *Baltimore:* Armstrong & Plaskitt.—In a series of letters, written in a very smooth and agreeable style, this lady, the widow of the late President of Transylvania College, (Ken.) has here presented the result of her own observations and impressions on a visit made in 1831, to Austin's colony. In climate and natural products, this region would seem to be little less than a Paradise; though there, as in all earthly paradises, man must eat his bread by the sweat of his brow—that is to say, as Mrs. Holley fairly states to all who may be disposed to migrate thither, that "a soil that yields the fruit of nearly every latitude almost spontaneously, with a climate of perpetual summer, must, like that of other countries, have a seed time and harvest. Though the land be literally flowing with milk and honey, yet the cows must be milked and the honey must be gathered. Houses must be built and enclosures made, the deer must be hunted and the fish caught. From the primeval curse, that in the sweat of his brow man shall eat bread, though its severity be mollified, there is no exemption even here. The emigrant should bear in mind, that in a new community *labor* is the most valuable commodity." This is both fair and just; and such seems to us the general character of this pretty little volume.

The history and success of Col. Austin's settlement, which individual enterprize and perseverance alone have founded, without any aid from government, or associations of any kind, and which, in the course of about eight years, has swelled from its first feeble commencement, until now it numbers *six thousand persons*, are full of interest and encouragement to others, and reflect great honor on the character, abilities and courage of Col. Austin himself. We are glad to find throughout these pages the expression strongly stated that *Texas* desires nothing better than to remain a portion of the Mexican nation, one of the free States of that confederacy. We feared that so great an ingress of Americans might have led to the hope and wish of being incorporated with the United States: on the contrary, however, the inhabitants of Texas are in interest and feeling Mexicans; and we certainly trust our present southern boundary will never recede.

England and the English; by E. L. Bulwer. 2 vols. New-York, J. & J. Harper.—The copious extracts which, on several previous occasions, we have made from this work, evince our opinion of its merit. It strikes us as a useful, original, and truly philosophical series of dissertations upon the Government and institutions of England, and upon the character and habits of the English. There is throughout, that vein of satire almost running into bitterness, which so particularly distinguishes Mr. Bulwer's manner of viewing things, and which certainly—such is the constitution of human nature—does not render his writings less attractive. Those, however, who expect to find in these volumes what some of the booksellers advertise them to be, "a new novel, by the author of Pelham," will be disappointed.

We shall make to-day but a single extract, which relates to popular education. It presents a better view of that in England, than we were prepared for; that is, as to the mere number of scholars; for in England, as with us, the books and the system of instruction seem alike imperfect—and is of interest, moreover, for its remarks on the class-books used in that most enlightened little duchy of Germany—*Saxe Weimar:*

A far greater proportion of the English population are now sent to school than is usually supposed, and currently stated. I see before me at this moment a statistical work, which declares the proportion to be only one in seventeen for England, one in twenty for Wales. What is the fact? Why, that our population for England and Wales amounts nearly to fourteen millions, and that the number of children receiving elementary education in 1828 are, by the returns, 1,500,000; an additional 500,000 being supposed, not without reason, to be educated at independent schools, not calculated in the return. Thus, out of a population of fourteen millions, we have no less than two millions of children receiving elementary education at schools.

In the number of schools and of pupils, our account, on the whole, is extremely satisfactory. Where do we fail? Not in the schools, but in the instruction that is given there: a great proportion of the poorer children attend only the Sunday-schools, and the education of once a week is not very valuable; but generally throughout the primary schools, nothing is taught but a little spelling, a very little reading, still less writing, the Catechism, the Lord's Prayer, and an unexplained, unelucidated chapter or two in the Bible; add to these the nasal mastery of a hymn, and an undecided conquest over the rule of Addition, and you behold a very finished education for the poor. The schoolmaster and the schoolmistress, in these academies, know little themselves beyond the bald and meager knowledge that they teach; and are much more fit to go to school than to give instructions. Now the object of education is to make a reflective, moral, prudent, loyal, and healthy people. A little reading and writing of themselves contribute very doubtfully to that end. Look to Ireland: does not the Archbishop of Cashel tell us, that a greater proportion of the peasantry in Ireland, yea, even in Tipperary, can read and write, than can be found amid a similar amount of population in England. I have been favored with some unpublished portions of the recent evidence on the Poor-laws. Just hear what Mr. Hickson, a most intelligent witness, says on this head:

Query. "Are you of opinion that an efficient system of National Education would materially improve the condition of the laboring classes?"

Answer. "Undoubtedly; but I must beg leave to observe, that something more than the mere teaching to read and write is necessary for the poorer classes. Where books and newspapers are inaccessible, the knowledge of the art of reading avails nothing; I have met with adults, who after having been taught to read and write when young, have almost entirely forgotten those arts for want of opportunities to exercise them."

"At the Sunday-schools," observes Mr. Hickson, afterward, "of most Dissenters, nothing is taught generally—I except rare instances—but reading the Bible and repeating hymns."

While we have so many schools organized, and while so little is taught there, just let me lead your attention to the four common class-books taught at all the popular schools of Saxe Weimar.

The first class-book is destined for the youngest children; it contains, in regular gradations, the alphabet, the composition of syllables, punctuation, elementary formation of language, slight stories, sentences or proverbs of one verse upwards, divers selelections, sketches, &c. "The sentences," says Mr. Cousin, "struck me particularly; they contain, in the most agreeable shapes, the most valuable lessons, which the author classes under systematic titles,—such as our duties to ourselves, our duties to men, our duties to God; and the knowledge of His divine attributes,—so that in the germ of Literature, the infant receives also the germ of Morals, and of Religion!"

The second book, for the use of children from eight to ten, is not only composed of amusing sketches,—the author touches upon matters of general utility. He proceeds on the just idea that the knowledge of the faculties of the soul ought a little to precede the more profound explanations of religion: under the head of dialogue between a father and his children, the book treats, first, of man and his physical qualities; secondly, of the nature of the soul and of its faculties, with some notions of our powers of progressive improvement and our heritage of immortality; and, thirdly, it contains the earliest and simplest elements of natural history, botany, mineralogy, &c.

The third work contains two parts, each divided into two chapters: the first part is an examination of man as a rational animal,—it resolves these questions: what am I? What am I able to do? What *ought* I to do? It teaches the distinction between men and brutes; instinct and reason; it endeavors to render the great moral foundations of truth clear and simple by familiar images and the most intelligible terms.

As the first chapter of this portion exercises the more reflective faculties, so the the second does not neglect the more acute, and comprises songs, enigmas, fables, aphorisms, &c.

The second part of the third work contains, first, the elements of natural history in all its subdivisions; notions of geography; of the natural rights of man; of his civil rights; with some lessons of general history. An Appendix comprises the geography and especial history of Saxe Weimar. The fourth book, not adapted solely for Saxe Weimar, is in great request throughout all Germany; it addresses itself to the more advanced pupils; it resembles a little the work last described, but is more extensive on some points; it is equally various, but it treats in especial more minutely on the rights and duties of subjects; it proceeds to conduct the boy, already made rational as a being, to his duties as a citizen. Such are the four class-books in the popular schools of Saxe Weimar; such are the foundation of that united, intellectual, and lofty spirit which marks the subjects of that principality.*

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* The Canton Gazette, of March 1832, states, that more than one half of the Chinese junks, bound to Teen-tsin in the year previous, were wrecked.—*Pub.*

* I know nothing we more want in this country

A Subaltern's Furlough; descriptive of Scenes in various Parts of the United States, the Canadas, &c. during the Summer and Autumn of 1832; by E. T. Coke, of the 45th Regiment. 2 vols. New-York, J. & J. Harper.—This is rather a good-natured, prejudiced, slip-slop journal of a flying tour through the United States, during the prevalence of the Cholera in our principal cities last year, by a young lieutenant, tired of the *ennui* of home and a garrison, and bent upon judging the Americans with his own eyes. He lost no time on his route, and gained, we infer from his pages, not much substantial information; at least, he imparts little such. The judgment passed in the paragraph we annex upon the corps of Cadets, as a military body, and the scenery of the Highlands, may serve as evidence of his taste and accuracy:

I twice saw the cadets at drill, but their long hair, dirty grey uniform, and want of erect military carriage, were sufficient to mar the appearance of the finest body of men in the world under arms. The words of command, too, were issued in such a drawling, careless tone of voice, that the movements were necessarily performed in a similar manner,—devoid of all smartness and precision. The interior economy of the establishment, however, is said to be well conducted, and strict discipline is enforced by Colonel Thayer, the present gentlemanly and able commandant. Though the soldierlike appearance of the cadets might not have exacly come up to my expectations, yet, if ever the two nations are so unfortunate as to meet again in hostile array, the good effects of this institution will be appearent in the polished manners and information acquired there by American officers. In former campaigns, generals have been called from the rear of their counters to assume the command of armies, and men who could not even sign their name from the plough to head divisous. Owing to the scattered state of the forces, it was my fortune to become acquainted with only few military and naval officers; but the uniform attention and kindness I experienced from all was such that I should feel proud in being enabled to render similar courtesies to any one bearing a commission from the United States.

We embarked in the afternoon of the 28th of October in the gigantic steamer, the "Norh America," which shot through the Highlands at the rate of sixteen miles an hour. I should have had all the New-Yorkers up in arms, and inveighing against me in no measured terms, had I ventured to express any thing like disappointment at the scenery of the Hudson. But so it was, and my expectations were not realized; because, as at the Falls of the Mohawk, its beauties had been much overrated. I had generally heard the Hudson compared to the Rhine, and many, indeed, professed to think it superior; but my want of taste (I should imagine) would no more admit of such a comparison than it would that New-York and London should be mentioned in the same breath. The scenery between Albany and West-Point is not in any ways remarkable; the Highlands, when taken separately, have nothing interesting, and no single reach of the river possesses any particular beauty. The rocky hills, covered with a thin and low growth of trees, approach to the water's edge, without any signs of cultivation or habitations to give the scenery life. The *tout ensemble* is all that is pleasing, and the numerous craggy precipices towering one above another alone possess any claims to the picturesque. I had kept the Hudson in reserve, as a kind of *bonne bouche*, previous to my immediate departure for England, expecting that I might see it to the greatest advantage at a late season in the year.

Select Works of Tobias Smollet, *in two volumes. Philadelphia*, Carey, Lea & Blanchard.—Who that recollects the delight with which in school boy days he devoured the adventures of Roderick Random and faithful Strap, or rejoiced in all the fun of which Peregrine Pickle, and Hatchway, and Pipes, and the immortal Trunnion are the authors or the objects, but will think these volumes a famous offering to the amusement of the present generation, who, in the multiplicity of modern publications, might but for them have gone through life with brows unrelaxed by the irresistible humor of Smollett. There is prefixed to these volumes a memoir of the author, by Sir Walter Scott.

The Parson's Daughter, by the author of Sayings and Doings, 2 vols. Philadelphia, Cary, Lea & Blanchard.

The Contrast, by Earl Mulgrave, two vols.—*Philadelphia*, Carey & Hart.

These two works are as different in merit, as in the rank of their authors. The first, by Theodore Hook, is an exceedingly well wrought and affecting story, probable, or at least not improbable in its incidents, and very skilfully conducted to its fortunate close. The other, by the present Governor of Jamaica, is inferior, in all respects, to the former work, *Matilda*, of the same noble author—is improbable, cold and dull. In the Parson's Daughter there are at least three characters admirably drawn, that of Mrs. Harbottle, Emma, and the naval surgeon, McGupus. In the Contrast there is not one that leaves any strong impression.

Conner & Cook have just issued three additional numbers of their cheap edition of the Works of Walter Scott, viz. *The Fortunes of Nigel, Peveril of the Peak*, and *Quentin Durward*.

Bibliotheque Choisie de Literature Francaise, No. 5. Philad. *Carey, Lea, & Blanchard.* New-York, *Charles de Behr.*—This number completes the interesting story of *Cinq Mars*, which was commenced in No. 2. It gives also the answer of Lamartine to the Adieux of Walter Scott, and a very pretty little poem by M. Chateaubriand, addressed to Madame *Recamier*, entitled 'Le Naufrage.' We commend this periodical to the patronage of all who make a study of the French language, or take pleasure in French literature.

[*From the National Gazette.*]

The 27th number of the *American Quarterly Review* has been issued. It is announced in an advertisement prefixed, that the publication of the work will be continued by Messrs. Key & Biddle, of Minor street, to whom it has been transferred by Messrs. Carey, Lea & Blanchard. These gentlemen found it inconvenient, owing to the extent and nature of their general business as publishers. Messrs. Key & Biddle have likewise intelligence, capital, zeal, and wide connexions in their professien. The editorship of the Review remains in the hands in which it has been from the beginning. Every effort will be made by the editor and the new publishers to sustain the work in every respect. The savans, men of letters, and members of the learned professions who have hitherto furnished the greater part of its contents, rank with the first of the country. Abundant contributions from the same or like sources are confidently expected.

FOREIGN INTELLIGENCE.

From Smyrna.—We have received by the brig Ottoman, Capt. Carey, Smyrna papers to the 23d June, but they contain nothing important in addition to what had been received by way of England.

King Otho arrived at Smyrna on the 17th June in an English frigate. As soon as his arrival was known, great numbers of Greeks crowded to the quays to get a sight of their sovereign. On his landing, the crowd was so great that it was impossible to make his way through it, and he was obliged to return on board again, and land at a remote place.

Smyrna Market, June 23.—The return of peace has already had a happy influence upon our market, and although in a dull season of the year, yet considerable activity is observed. The arrival of the caravans, which had been delayed by a variety of circumstances, has contributed to revive commerce in some degree.

Coffee.—The quantity in depot is considerable at this time, in consequence of some important speculations which have just been made by European houses. The present rates are 700 a 760 p., but holders are expecting an advance, and demand 750 a 800.

Sugar.—The depot is very limited. Most of the Havana white is held at 180 p. per qtl. which is expected to be obtained, notwithstanding sales have been made at 165 a 170. The article is becoming more scarce every day.

Wool.—Prices vary according to quality, from 150 to 180 p. per qtl.

The crops in general this year promise well, particularly raisins and oil.—[Boston D. Adv.]

[*From the Boston Gazette.*]

Trade with St. Croix.—A mercantile friend has favored us with a St. Croix paper of the 5th inst. containing an Ordinance in relation to commerce and shipping in that Island, from which we make the following extracts:

With regard to Shipping.

§ 1. All vessels, without distinction, Danish or foreign, either from Danish or foreign parts, shall in virtue of this ordinance have free admittance at St. Croix, and may discharge or load cargoes in the port of Christiansted or the road of Frederiksted.

§ 2. The former charges on vessels under denomination of anchorage, fees, stamp duties, &c. are revoked: anchorage, however, to be paid on the whole tonnage of vessel.

Free admission or free duty.

Corn, Meal, Indian Corn, RumPuncheons, Staves, Heading and Hoops for Sugar Hhds, and RumPuncheons, Cooper Nails, Hoes, Bills, Utensils for Boiling Sugar, Distilling Rum and for Sugar Mills, Fire bricks, Mules and Asses.

Vessels arriving,

Discharging goods amounting to one-half of the full cargo of the vessel or upwards, pay 48 sk: for each Commercelast,

When 1-4 to 1-2 of a full cargo is discharged 32 sk: for each commercelast,

If less than 1-4 of the full cargo is discharged 16 sk: for each Commercelast.

Vessels departing.

Anchorage to be paid in the same proportion according to the cargo taken on board. All vessels neither loading or discharging cargo to be free from charges of anchorage, as well as all our Island vessels trading between St. Croix and the other Danish Islands.

If anchorage has been paid at one of the Island Custom Houses, no additional charge can be demanded during the same voyage, except the vessel should again discharge or load more goeds, and which in conjunction with the former discharging or loading—should reach such amount as subjects her to pay a higher rate of anchorage money.

SUMMARY.

Mr. Audubon, of whose recent tour, a sketch will be given in our next number, taken from the Boston Daily Advertiser, reached this city well, and well satisfied. After a short sojourn among us, and a tour to some of the neighboring States, which will, we do not doubt, have the effect of adding some names to the list of subscribers for his magnificent work, Mr. Audubon, will, as we learn from him, depart for Tampico, on a bird tour through Mexico. His indefatigable labors will leave no field connected with the subject of his great publication unsearched; the public will take care, we are sure, that these labors shall not be without their reward.

The following are the remarks found in the last received number of the London Christian Remembrancer on the Rev. Thomas S. Britain's book, called by him "An Apology for conforming to the Protestant Episcopal Church, contained in a series of letters addressed to the Right Rev. Benjamin T. Onderdonk, D. D., Bishop of the Diocese of New York"—1833.

"Almost every arrival brings us some new proof of the growing importance of the American Church. We have a little volume of singular merit, which which we wish to see widely circulated, with the necessary mutatis mutandis, among Churchmen and dissenters at home. It is an admirable defence of Episcopacy, and derives additional value from the circumstance that the writer is a convert from conviction to the principles which he advocates, having been originally a dissenting member. The American Episcopalians may well be proud of gaining so fair a proselyte, and of ranking so zealous an advocate in the number of their brethren."

$603,900 were passed to the credit of the U. States Treasury on Monday by the Collector of this port.—It was the amount of duties collected during the previous week, after deducting debentures, return duties,

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than good class-books for the use of popular schools; books that shall exercise the judgment and teach children to *reflect*. Such works should be written by a person of philosophical mind, practised in education, and linked to no *exclusive system*,—the curse of knowledge in this country.

light house bills and all other sums paid by the Collector. It is, we understand, the largest sum which ever accrued in a single week. This does not look much like a *reduction* of revenue.—[Jour. Com.]

The Washington, which sailed on Wedenesday, for Canton, has on board ten young men, of respectable families, who have gone out for the first time, with the intention of becoming ship-masters. They are all amply provided with instruments and books to learn navigation. May success attend them.

It is hardly necessary to add, that the Washington is a Temperance ship, as *all* the shipping articles of our East Indiamen are now headed—"No Grog;" the appalling word which has cost our underwriters so many millions.—[Journal of Commerce.]

[*From the Baltimore American.*]

The steamboat *Watchman*, Lieut. Gedney, of the U. S. Navy, commander, sailed yesterday at one o'clock for Mobile, intending to stop at Charleston to take in fuel. This boat was built at Washington, D. C. and is to transport the U. S. mail on Lake Pontchartrain between New Orleans and Mobile.—The Watchman is a staunch boat of 246 tons, with elegant accommodations for passengers, and a low pressure engine, constructed by Messrs. Watchman and Bratt of this city. It is expected that the efforts which the contractors on that route are now making, will enable them to convey the New Orleans mail with regularity. On the arrival of the Watchman at Mobile, Capt. Edmondson will assume command.

The weather continues disagreeably warm. The city is healthy for the season; some cases of yellow fever have appeared, but that sickness does not prevail as an epidemic. Absentees however, should be in no hurry to return for a while yet.

Business is very dull. People have now little more to do than to anticipate the activity of the approaching season when our birds of passage return among us to take up their winter quarters.—[N. O. Bee, Aug. 21.]

Extract of a Letter dated Oaks Corners, Ontario Co. (N. Y.) Sept. 4.

Destructive Storm.—"We have met with great losses since your last letter. My wheat being cut, and most of it remaining in the fields, there was, on the 15th ult. a severe hail-storm, with high wind, which overturned the shocks, blew down fences, trees, &c. whilst the hail shelled out much of the wheat. My corn is nearly cut off, and five acres of buckwheat, as fine as ever grew, entirely swept off in five minutes. Dr. Steward, who lives about a mile from me, had a barn, in which were several tons of hay and a horse, removed about *five feet* from its foundation; but the frame being strong, it is still standing. One other barn in the neighborhood was blown over. The storm extended from 1 1-2 to 2 miles in width, passing from N.W. to S.E. but how far I have not yet learned. I have yet heard of no loss of life by it, although the hail was so large that I picked up one the next morning, two hours after sunrise, which was 4 inches in circumference."

The *Anniversary Dinner of the Horticultural Society*, was given yesterday at Niblo's, the President, Mr. J. Lorillard, presiding, supported by Messrs. P. Hone and C. Oakley, Vice-Presidents, and honored by the presence of many members of the Court of Errors as guests.

The display of fruit was very handsome; and some among them, particularly a *bon Chretien* pear, raised in Springfield, N. J. were rare and excellent. The peaches and nectarines were abundant. Of figs, there were some very good. The grapes and melons were not remarkable. The table was ornamented with natural flowers, among which the gorgeous Dahlias predominated. A box of flowers, very prettily arranged, was sent by Madame Parmentier, and excited general admiration.

It was altogether an agreeable entertainment, enlivened with mirth and song, and good wine. The following are the regular toasts:

1. The President of the United States.
2. The Army and Navy of the United States.
3. The Governor of the State of New York.
4. The Mayor and Commonalty of the city of New York.
5. The highest Tribunal of the State, constituted to meliorate the harshness of Law, and to *prune* its *wild sprouts*.
6. The state of New York,—Powerful without ambition, wealthy without pride, and noble without vanity; while she is the first in greatness, she is the last in presumption! and is ever ready to make a sacrifice to the "Union."
7. The United States,—Unexampled in their united prosperity; may they be unequalled in their united duration.
8. Horticulture,—The first employment of man in his state of primeval innocence; it is the noblest science which can occupy his attention, having the highest sanction to recommend it.
9. Agriculture, Manufactures, and Commerce,—The three great sources of national wealth; united, they form the strongest safeguard of our national independence.
10. Horticultural Societies in every quarter of the globe; while they unite their efforts, to beautify and improve the earth, its flowers, and its fruits, may they also contribute to the moral and intellectual improvement of the whole of the human family.
11. The memory of De Witt Clinton—"Born to exalt the glory of his native State, his life is interwoven with her history, and his name as imperishable as her existence."
12. The memory of William Wilson, the first President of this Society, our late highly esteemed and much rsspected advocate.
13. The Fair sex,—The choicest flowers of our country.

Volunteer Toasts.

By the *President, Jacob Lorillard, Esq.* The Horticulturist, who unites the cultivation of the moral sense with the cultivation of the vegetable tribes.

By the 1st *Vice President, Philip Hone, Esq.* Nullification—A noxious plant, first sown by an intruder in the Garden of Eden: may it be effectually eradicated from the rice fields and cotton plantations of our beloved country.

By the 2d *Vice President, Charles Oakley, Esq.* The practical Gardeners of New York—They have shown themselves worthy of public patronage: may they find their reward in a liberal public.

By Mr. Bronson, of the Senate. Horticultural Excellence—The *fruit* of intelligence, enterprize and industry.

By Mr. *Westcott*, of the Court of Errors. The City of New York—Not less distinguished for its liberal hospitality, than for its resources and enterprize.

By Mr. Macdonald, of the Senate. The practical Farmer, aided by the scientific Agriculturist.

By the *Mayor* of the City. The man who cultivates his own fields, and his own garden, with his own hands.

By C. W. Lynde, of the Senate. Agriculture and Horticulture—One the stock, the other the blossom, may they succor each other—and their fruits will be abundant, provided there is no nullifying weed suffered to flourish in their midst.

By Alexander Walsh. Horticulture—The art by which nature is taught to improve her own productions.

By John W. Wyman. The Gardener—Let him be proud of his employment—the only one designated for man, by the Almighty himself.

By Daniel E. Delevan. The memory of Linnæus—Much as we owe of pleasure to his perseverance and industry in bringing the science of Botany to its present state of perfection, to gratify the eye and the palate, let us not forget that he aimed at a still higher motive—the ennobling of the faculties, and the refinement of the heart.

By Mr. *Livingston.* The Hudson and Delaware Canal.

By Alexander Hamilton. A repeal of the duties on coal, and a reduction of canal tolls.

By Mr. *G. Davis.* Horticulture, the most rational employment of man—*our earthly paradise:* may we eye with caution the forbidden fruit.

By Mr. *Price.* The Vice President of the United States—An indigenous plant will survive the shock of transplantation.

By *D. K. Minor.* The Boston Horticultural Society—Solicitous alike for the *repose of the dead*, as for the refinement and happiness of the living: may this Society speedily imitate their example, in providing a Rural Cemetery.

The Bon Chretien Pear, presented by Mr. Wade, three of which weighed 2 lbs. 3 ozs., was raised by *William Stiles, Esq.* of Springfield, N. J, from a tree imported a few years since from France;—a description of which, with an engraving of one of the Pears, and other kinds of fruit, together with a more particular account of the *Anniversary* of the Society, will be given in the next number of the New York Farmer.

The annexed obituary notice from a Canada paper, will interest many yet alive in this State who knew and highly respected the late Dr. Cochran:

Died at Windsor, Nova Scotia, on Sunday, the 4th August, aged 77, the Rev. William Cochran. D. D., for many years Vice President and Professor of Languages, Logic and Rhetoric in King's College at Windsor. Dr. Cochran was a native of the neighborhood of Omagh in the North of Ireland, and received his education at Trinity College, Dublin, where he took his first degree with distinction, to which the University, many years after his removal to Nova Scotia, added the degree of D. D. by special diploma, an honor rarely conferred by that learned body. In 1784, shortly after completing his education, he came to America, and was appointed Professor of Languages in the College of New York, formerly called King's College, and then re-opened after the peace with the United States under the name of Columbia. Here he had under his care several young men who have since attained the highest reputation and distinction in the United States, and some of whom kept up a correspondence with him until a late period of his life. Among his pupils were the late Governor Dewitt Clinton, and John Randolph—Dr Hosack, one of the most eminent living physicians of the United States—the late Dr. John Mason, Chancellor Jones, and others. Although he early secured the friendship of the first persons in the community, (among others, of the distinguished and lamented Alexander Hamilton, who honored him with his particular and warm regard,) a dislike of republican institutions and habits led him to remove in 1787 to Nova Scotia, where he was appointed to the charge of the Public Academy at Halifax, and was induced, in 1789, to accept the situation of President of the Collegiate School, then established by the Provincial Legislature at Windsor, with a promise, that on the Royal Charter being granted to it, he should remain at the head of the institution.—When the charter was granted in 1802, a majority of the Governors, in violation of this promise, through the influence of one of their number, who was a member of the University of Oxford, and thought that no good thing could come out of an Irish College, obtained the appointment of an Oxford graduate, as President. Dr. Cochran, however, continued in the institution, as Vice President, and Professor; and in those capacities, by his sole exertions, sustained its character, and at different periods, its very existence, when it must otherwise have been shut up, until, in 1831, his great age, and increasing infirmities, compelled him to resign.—In the course of his labors, as an instructor of youth, in Nova Scotia, a large proportion of the members of the three learned professions, who have risen to eminence or become the instruments of good in their generation, either in that Province or in New Brunswick, (and many in the Canadas,) have owed either the foundation or the completion of their education to his instruction. A list of his pupils still alive, would be found to include many of the highest standing in the church, the law, the medical profession, and the service of government throughout the North American Colonies. The authority of the teacher was in him so tempered by winning kindness and benevolence that instruction became attractive, and while its effect was thus increased, it rarely happened that any of those who left his care, ceased to regard him in after life with affection as well as with respect; the teacher of the youth became the "agreeable companion, the fatherly adviser, the warm and steady friend," of the man of mature years; and the connection continued to the last, a source of mutual comfort, pride, and pleasure. Uniting an accurate knowledge of the ancient classics with a singular sensibility to their beauties, he added to these an extensive acquaintance with modern literature, and it was his great object to infuse a taste for both into those whose education he conducted; and to crown the whole with principles and habits of religion and moral conduct, and of practical usefulness. He had been for 43 years a Missionary of the Society for Propagating the Gospel, and it is believed was the oldest missionary in their service at the time of his death. In that service he encountered labors, hardships, and even dangers, of which those only can form an idea, who know what was the condition of the new settlements in Nova Scotia 40 years ago. His health, which had suffered for several years from severe attacks of disease, had entirely failed during the last few months, until at last, having approached the extreme boundary of human existence, "he came to the earth like a shock of corn in its season," peacefully closing a life of usefulness, simplicity, piety and virtue, in the stedfast hope, through the merits of his Redeemer, of rising to a life of blessedness hereafter.

CANALS.

Canal Tolls and Canal Navigation.—The aggregate amount of tolls received upon all the canals of the state for the month of August, is $147,945: exceeding the amount made during the same month last year, by the sum of $58,266. The revenne derived from tolls, from the opening of navigation, to the first of September, is greater by more than *one hundred and fifty-eight thousand dollars*, than it was during the same months of 1832: and exceeds by about $100,000 the receipts for the like period in 1831. The Cholora had a serious effect in diminishing the tolls for July and August of last year.

There is every indication of an active and extensive fall business, and it is now certain that the tolls of this year compared with last, will show an increase of a hundred and fifty thousand dollars, and it would not be surprising if the increase should come up to two hundred thousand.—[Albany Argus.]

OUR CANALS.—We republished yesterday from the Albany Argus a brief paragraph, stating the receipts from tolls on the Canals of this State during the month of August, with comparative statements from and up to the same period in other years, showing a constantly increasing and flourishing business. In another column will be found a circular issued by the Cemptroller of the State, to the holders of Canal stocks redeemable in 1837, offering a premium for such portion of those stocks as the holders may be tempted at once to realize. Even these two publications, however, significant as they are, fail to give an adequate notion of the real and growing value to this State, to the Western States, and indirectly, but unquestionably, to the Union at large, of these great New York channels of intercommunication. We derive from the Argus some additional particulars, which will interest all readers.

It has already been stated in this paper, that the tolls on the Erie Canal, both on the ascending and descending freight, had been reduced at the commencement of the season. The reduction on the articles constituting the principal descending trade, such as flour, salted provisions, butter, cheese, wheat, &c., was equal to 29 per cent. on former rates; that on the ascending trade, chiefly composed of more valuable but less bulky merchandize, was equal to 14 1-2 per cent. Notwithstanding these reductions, the increase of the tolls exceeds $157.000—thus furnishing another instance of the swelling of revenue by the diminution of duties. The transportation on the Canals grows so rapidly, however,—and great as it is, it is yet far from the extent it must reach, unless repelled by want of accommodation and facilities,—that great inconvenience is already experienced from delays at the locks. "The constant use of the locks night and day," says the Argus, "has not been sufficient to pass all the floats, without a delay which is vexatious and expensive." There *must* be a double set of locks, and that soon; for time is money, and reduced tolls will be counteracted, and the benefit of them be lost, if what is saved in pecuniary expense be counterbalanced by long delay. It is contemplated, and very wisely we apprehend, by a simultaneous proceeding in Ohio and in this State, to reduce the rates of toll levied in each State on merchandize, 25 per cent. This will add greatly to the ascending trade of the Erie Canal, and present an additional reason for doubling the set of locks; because, such a trade can only be secured through this channel, by the greater despatch and certainty with which merchandize will thus reach its various destinations in the far West.—Delay in this instance would be fatal to transportation. How various are the points in the western and south-western States already reached through the Erie Canal, will appear from this paragraph of the Argus:

We are informed that goods, coming from New-York, have been shipped the present season from Albany to Galena, Pekin, Peoria, and Lower Alton, in the State of Illinois; to Paris, Maysville, Petersburgh, Louisville, and Lexington, Kentucky; to Chicago and Green Bay, Michigan Territory; to Fort Wayne, via the Maumee, Indiana; to Nashville and Clarksville, Tennessee; to St. Louis, Missouri; and to Florence, Alabama. This information is derived from one of the forwarding lines, (the Merchants',) and embraces only the places to which that line had shipped goods; there are several lines engaged in transporting goods to Ohio, and the other western States, whose, shipments might have been referred to, but we have given points in six States beyond Ohio, which are reached by goods transported through the Erie Canal.

It is impossible to look at the facts here hastily alluded to, and to let the imagination rove even within the most reasonable limits of the future they foreshadow, and not to feel pride in belonging to this great State;—this State, as just as patriotic, and as forbearing as it is great.

REDEMPTION OF ERIE AND CHAMPLAIN CANAL STOCKS.—The following circular has been issued by the Comptroller of this state, to the holders of Erie and Champlain canal stocks, which are reimbursable in 1837.

COMPTROLLER'S OFFICE,
Albany, August 7, 1833.

The holders of the New-York state stock issued for the construction of the Erie and Champlain canals, are informed that the commissioners of the canal fund are now ready to pay off and cancel the stock which is redeemable in 1837.

As an inducement to the holders of this stock to surrender it and receive payment therefor, four years before the period fixed for this redemption, the commissioners offer to pay a premium of five per cent. upon the five per cent stock, and a premium of eight per cent upon the six per cent stock of 1837.

These premiums will be paid upon any amount of the said stock which shall be transferred to the commissioners on the first day of October next, or on the first day of January, 1834, after the holdiers shall have received the quarter's interest due on those days respectively: Or the commissioners will pay the premiums before stated, together with the current interest upon the stock from the preceding quarter day, to the day of the purchase, for any amount which shall be transferred to them at any time before the first day of January next.

The holders of the Erie and Champlain canal stock are reminded that the surplus moneys now in the hands of the commissioners are by the constitution of the state, pledged to reimburse the principal of this stock, and cannot be diverted from that object. It is therefore morally certain, that on the first of July, 1837, the entire sum which shall remain unpaid of the stock which is redeemable in that year, will be paid off at par. And with the means of redemption in the hands of the commissioners, it is equally certain, that as the time approaches when they can legally redeem this stock at par, the premium which is now offered will gradually diminish, until it reaches that point.

The holders of this stock will perceive that if they can re-invest their money at four per cent. it will be for their interest to sell at the premiums now offered. The surplus canal funds upon which the commissioners are drawing for the redemption of this stock, are deposited in sundry banks, and yield an interest to the state of 3 1-2 and 4 1-2 per cent. It will readily be seen that the situation of the surplus canal funds enables the commissioners, in the purchase of this stock, to offer terms highly favorable to the interests of the stockholders, without any material sacrifice of the pecuniary interests of the state. The commissioners readily admit, what must be inferred from the high premium offered, that they are very anxious to apply the money in their hands to the redemption of the Erie and Champlain canal stock. In making a small apparent sacrifice to effect this object, the state gets rid of the hazard incident to the management of three or four millions of dollars; and by gradually possessing itself of the stock of 1837, the serious pressure upon all the monied operations of the state will be avoided, which might result from allowing the canal moneys to accumulate in the state banks—to be diffused by them through every department of business—and then to be drawn for on the 1st of July, 1837, to the amount of three and a half millions of dollars, for the redemption of the stock then payable.

These and other considerations have induced the commissioners of the canal fund to offer so large a premium for the redemption of the canal stock of 1837; and they have supposed that this object might be promoted by giving this explanation, and by making known to the stockholders the terms on which the stock can be redeemed.

Respectfully your obedient servant,
A. C. FLAGG, *Comptroller*.

MARRIAGES.

Last evening, September 9, in St. Thomas Church, by the Rev. Dr. Hawks, WILLIAM WINNE, of Albany, to JANE M. eldest daughter of Donald Malcolm, Esq. of this city.

This morning, by the Rev. Dr. Woodbridge, FREDERIC W. BURKE, to ANN C. daughter of the late Apollo Potter, all of this city.

DEATHS.

At Brooklyn, L. I., this morning, (Sept. 9) GEORGE HENRY, aged 6 months, infant son of Francis G. Fish.

On Wednesday, Lyman Clark, aged 60.

At Staten Island Sept. 4th, Mr. James Parsons, of Georgia

On Thursday evening, Wm. Sloan, aged 37 years.

On Sunday last, Jos. Levy, in the 44th year of his age.

Yesterday, Rufus A. son of Chas. W. Davenport, aged seven years, seven months and twelve days.

Last evening, at New Town, L. I. near Halletts Cove, WILLIAM, son of Thomas R. Lawrence, in the 6th year of his age.

Of Yellow Fever, at sea, on board the Condordia. from New Orleans, on the 2d inst. Charles Card, aged 21, son of William Card, Esq. of this city.

On Wednesday, of consumption, Elizabeth Harbinson, in the 47th year of her age.

On Saturday evening, Mrs. MIRIAM BUNKER, wife of Elihu S. Bunker, aged 58 years.

On Saturday evening, of diarrhœa, JOSEPH HARDCASTLE, aged 35 years, son of Joshua Hardcastle, ancient printer of New York.

At his residence, on the 7th instant, after a long and painful illness, JOHN LEVITT HARRIS, Esq., (nephew of Levitt Harris, Esq., American Chargé at Paris,) Mayor of the city of Burlington, N. J., in the 46th year of his age.

Yesterday morning, in the 66th year, Mr. GEORGE BEMENT, Merchant, of this city.

This morning, ELIZABETH CARMER, aged 72 years.

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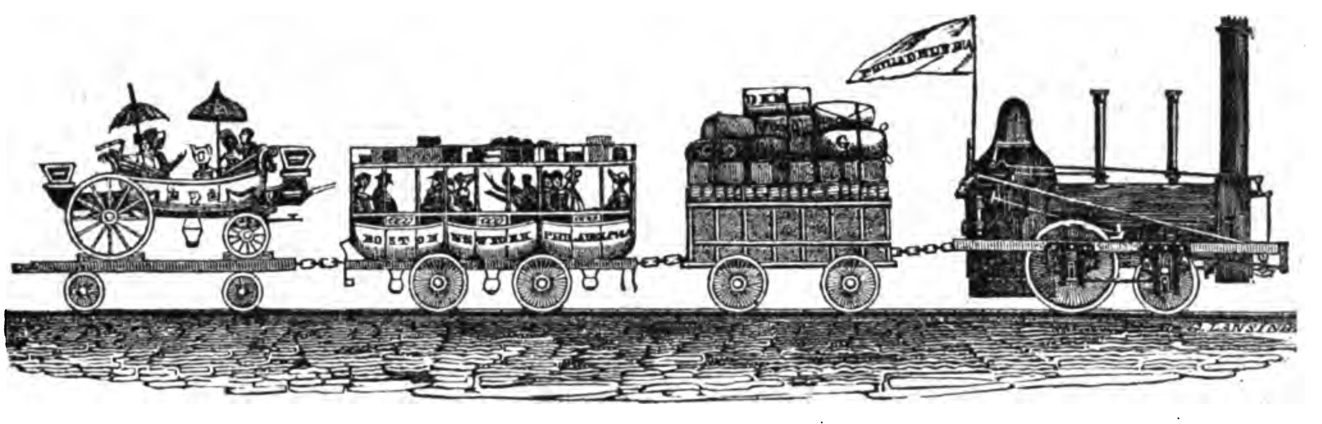

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, SEPTEMBER 21, 1833. [VOLUME II.—No. 38.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, SEPTEMBER 21, 1833.

TONNEWANDA RAILROAD.—We understand that the following gentlemen were elected Directors of this road, and that the route will be immediately surveyed. The character of the Directors guarantees the energetic and satisfactory prosecution of the work.

Attica—Gaius B. Rich.
Batavia—David E. Evans, James Brisbane, Trumbull Cary, Augustus C. Stevens.
Le Roy—Jacob Le Roy.
Caledonia—Willard H. Smith.
Rochester—Jonathan Child, Frederick Whittlesey, Thomas Kempshall, A. M. Schermerhorn, Elihu H. S. Mumford, Henry B. Williams.

The Directors of the Utica and Schenectady Railroad Company have made choice of Mr. Wm. C. Young, the late capable engineer of the Saratoga Railroad, and Mr. Hopkins, now engaged on the Raritan and Delaware Canal, in New-Jersey, as engineers of the Company. These engineers, we understand, will commence the survey of the road the present week, and will probably complete it this fall, or in time to put the work under contract, and commence the grading as early in the spring as practicable.—[Schenectady Whig.]

We understand, says the Albany Argus, that Wm. C. Bouck, Esq., declines the appointment of Commissioner of the Utica and Schenectady Railroad Company.

PORTSMOUTH RAILROAD.—The first division of this work embraces the distance from Portsmouth to Suffolk, 16 miles, which was commenced last spring at each extremity. The Directors are satisfied that the sixteen miles now under way will be completed much below the estimates of Col. Crozet. About the centre of the 16 miles the road passes over the edge of the Dismal Swamp, a distance of three miles, now entirely dry; the soil being similar to pipe clay, covered with a spongy super-stratum, about three feet thick; and consequently, with very little more labor will be made as substantial there as in any other part. The grading being nearly completed on the section next to Suffolk, the work of dressing the timber for laying the rails was commenced last Tuesday; and the iron rails and locomotive engine are shortly expected from Liverpool.—[Norfolk Herald.]

SHIP CANAL.—The ship canal, which has been constructed by Major G. Camp, for Messrs. W. Peacock, of Maysville, Chatauque co., Evans, of this city, and Guinn, of Batavia, was filled with water on Friday last. It is an extensive and valuable work, and presents another evidence of the enterprise of the owners of real estate in Buffalo, and of the great and growing advantages of the place.—[Buffalo Journal.]

On the Construction of Curves for Arches.

By J. S. VAN DE GRAAFF. To the Editor of the American Railroad Journal.

SIR,—An article in the 34th number of the American Railroad Journal, on the construction of curves for arches, contains a method of constructing an elliptical segment, which will not vary essentially from the true curve of equilibrium with a horizontal roadway. This subject, perhaps, requires a more full investigation; for notwithstanding the curve of equilibrium, in the case proposed, is well known to the scientific engineer, yet that curve is seldom employed in practice, even in the arches of large culverts, which support a heavy pressure of embankments, *in consequence of the difficulty of construction.* And I know of no author who has given so accurate an approximation of the true curve, as that by means of an elliptical segment, which may be easily constructed.

I am, therefore, induced, in consideration of the practical utility of this subject, to present to you the following investigation for the mathematical readers of your Journal, with a hope that it will, if possible, elicit from them a convenient and more perfect arch than the segment here proposed.

It is a fact easily demonstrated, that *no curve of the parabolic kind* is well suited for the arch of a large culvert, which is to sustain a heavy pressure with a horizontal roadway. For the general equation of such curves being $x \propto y^m$, they are equilibrated when the pressure $\propto y^{m-2}$: and, therefore, when $m < 2$, the curve is not proper for sustaining much weight near the springing points; and when $m > 2$, it will not be well adapted for supporting much pressure at the crown. And from a similar investigation, it will appear that the hyperbolic curve is also liable to the same objection; and that the segment of an ellipsis may be made to approach very nearly to the curve of equilibrium in the case proposed. It is true, as mathematicians have demonstrated, that a conic section may be made to pass through five given points; and when those points are taken in the flanks, springing points, and crown of the equilibrated curve, it is evident that either the ellipse or hyperbola may be made to meet the curve in all those points. Nevertheless, the hyperbola would be very injudiciously used in such a case, as will readily appear from the above.

Let p denote the rise, q the half span, and h the thickness at the crown, including the thickness of the ring of the arch and the matter above, reduced to a homogeneous mass. The following is then the well known equation of the curve of equilibrium with a horizontal roadway:

$$y=q\times\frac{Log.\left\{x+h+\overline{x^2+2hx}\,\big|^{\frac{1}{2}}\right\}-Log.\,h}{Log.\left\{p+h+\overline{p^2+2hp}\,\big|^{\frac{1}{2}}\right\}-Log.\,h}$$

Now, in producing a coincidence of curves, corresponding to any given values of the coordinates x, y, it will be found that the equilibrium will be most complete when $x=\frac{3}{5}p$ very nearly; in which case, taking A to represent the logarithmic part of the above equation, we have $y^2=q^2\times A^2$; and, therefore, when a denotes the semi-transverse axis of the required ellipse, we have by con. sec.,

$$a^2-\overline{a-p}\,\big|^2 : a^2-\overline{a-\frac{2p}{5}}\,\Big|^2 :: q^2 : q^2\times A^2;$$

which produces the following formula,

$$a=p\times\frac{25A^2-4}{50A^2-20}$$

From this formula the transverse axis of the required ellipse becomes known, and the conjugate may then be had without difficulty. It will be found that this value of the semi-transverse axis agrees with that given in the 34th number of your Journal, and which was obtained upon very different principles.

Very respectfully yours, &c.,
J. S. VAN DE GRAAFF.
Lexington, Ky., September, 1833.

Undulating Railways.—Our readers will probably recollect an article published in the Journal some months since, from the London Athenæum, holding forth the superiority, or at least equality, of *Undulating* Railways. We are now enabled to refer again to the subject, (which we have heretofore been prevented from doing by the non-arrival of our English Magazines,) by giving a series of communications *for* and *against* it, from the London Mechanics' Magazine, from which it will be perceived that some change of opinion, relative to the truth of Mr. Badnall's theory, has been effected.

The Undulating Railway. By Junius Redivivus. [From the London Mechanics' Magazine for March.]

Sir,—I have been casually informed that there is exhibiting somewhere about town, a model of an undulating railway, whereby the inventor undertakes to convince the public that the antique notion of level surfaces being the best adapted for wheel carriages is entirely wrong; and, of course, if his position be correct, the road surveyors have wasted a 'pretty considerable quantity of money,' to make roads worse than they were before, by levelling the hills, which ought to be restored without delay.

But the inventor of the undulating railway is by no means an originator. The Russian ice-hills on the Neva, for the amusement of the sleighers in the winter season, formed of boarded scaffolds, overlaid with blocks of ice, are much more ancient, and the *Montagnes Russes* of the *Champs Elysees*, which served for summer amusement to the youths and maidens at Paris, (the King of Prussia inclusive,) some fifteen years back, were railroads of something of the same nature as that now proposed. But the proposer of the present undulating railway has stumbled upon a fallacy, which possibly may deceive himself, but which ought not to be suffered to deceive the 'barren spectators' amongst the public, because all such fallacies serve to inflict mischief upon the really useful inventors, by getting them classed under the invidious name of 'schemers,' which ought properly to be confined to the plotters of absurdities alone.

There can be no doubt that a carriage placed on the top of a hill of sufficient inclination will descend with so much momentum as to drive it partly up a second hill of the same height and inclination, or over a hill of considerably less height and inclination.

There can be no doubt, also, that a fly-wheel, put in motion, will continue to revolve for some time after the original moving power ceases to act on it; but it is a woeful error to suppose that either the fly-wheel or the carriage can generate additional power of their own. I once heard a story of an Irish schemer, who had devised a plan for increasing the power of a ten-horse engine to that of fifty, by means of an enormous fly-wheel. Finding a 'flat,' he was set to work; and when he had, after some difficulty, succeeded in casting his enormous wheel, he expended much money in fitting up an apparatus to turn and polish it all over, to prevent the loss of power by friction in the atmosphere with a rough surface! Much time being lost, the proprietor, who was at all the expense, became impatient, and then there was another delay to know how the wheel was to be stopped, with all its giant power. This having been arranged, both schemer and proprietor were much astonished to find that it would not go at all. The proposition to get additional power, or save power, by means of an undulating surface, savors much of a perpetual motion scheme. It is clear that what is called *momentum* in falling bodies, can be nothing more than *gravitation*, whereby all bodies have a tendency to get as near as they can to the centre of theearth, and the heaviest have the most success. The momentum of the carriage in going down hill is in proportion to the height which it is raised, and the diminishing of friction by the degree of inclination. In the Russian ice hills, the first, from which the sleigh starts, is of a given height; the second diminishes; the third also, and so on until the level ice is attained. Were all the hills of the same height, the sleigh would descend the first, partly ascend the second, and then oscillate for a time between both until it stopped. The reason that the sleigh moves at all, that it possesses the power of motion, is, that it is removed from a lower to a higher level, and the tendency of its gravitating power is to reach the lowest—as the case with water, which has the advantage of being of a more mobile substance. But what places the sleigh in the situation to use this power, or rather what confers the power upon it? The animal power, either of human hands or horses' shoulders which has been communicated to it, and which, doubtless, if means were taken to ascertain it, would be found to be exactly equivalent to the power put forth in surmounting the hills, with the exception of the loss by friction, *i. e.* the animal power applied in the first instance would have served to draw the sleigh on level ground as great a distance—I mean, over as many yards of surface—as it traversed on the hills. Therefore, in this case, there would be no *gain* of power, or of any thing but amusement.

The late Mr. Bentham was accustomed to say, in a jocular manner, that when he made a world, it should be all down hill. Now, such a contrivance would be admirable for diminishing friction, if there were any arrangement whereby we might always be at the top. If the new invented railway were contrived so that it might be constantly down hill, or over diminishing hills, there is no doubt that much friction might be avoided; but by what process are we to get to the top to begin again? There is but one answer—by labor got out of animals, or steam. And what would be the increase of work up hill? What was gained one way would be lost by the other. I say nothing of the mischief resulting both to cattle and engines by the irregular motion. But we will suppose the railway an average level, *i. e.* the undulations to be all alike, what possible advantages can it have over a straight and regular surface? It has been shown that to get the momentum of the high level, the power must be, so to speak, 'put into it,' *i. e.* it must be applied before hand, just as the steam of an engine is got 'up' to start with effect, or as is said of a horse who has been off work a few days, 'his go is bottled up.' When the carriage on the undulating railway has reached as far up the second ascent as the momentum will drive it, how much power must be put on to carry it up the remainder of the ascent? Probably as much as it would have taken to perform the distance of two undulations on a level road.

The *Montagnes Russes* of Paris were formed in a circle, and consisted of one descent and one ascent. The descent was steeper than the ascent, yet the impetus, or momentum, only served to carry the car one third up the ascent, when it was hooked by an endless band, worked by horse power below, and drawn to the top. Now, the power applied by the horses in drawing that car to the top, was probably equivalent to the power which would have been exerted in drawing the car the whole distance on level ground, difference of friction excepted. The fact is, that in all cases the same quantity of power must be consumed to drag a wheel carriage up to a given height. If the ascent be steep, a large amount of power is requisite for a short time. If the ascent be gradual, a small amount of power will be requisite for a longer time. The total will be equal. Increase of speed is loss of power, and *vice versa*; yet, strange to say, there are numerous unthinking people who believe that by making a simple machine complicated, as in the case of this railroad, they actually multiply their power: as if an accelerated motion down hill were not balanced by an up hill to ascend in turn.

The process is somewhat similar to that of a man who, determining to erect a water-mill, were first to erect a wind-mill or steam engine to pump up the water necessary for his water-wheel. There are, I believe, water-mills in some of the mining districts which are supplied from the pumps worked by engines, but then the power of the engines is not expended for the purpose of getting rid of a stream of water. The power got out of the water afterwards was first put into it by the engines, and the saving that power by using it for the water-mill, is analogous to the process of the soap-makers, who boil down their waste ley to recover the alkali it may contain; but they do not make waste ley for the purpose of getting the alkali out of it. The power of the water-mill is commonly but a very small proportion of that of the engines which supply it, because the descent of the fluid is much less than its ascent. Were it to fall on the wheel from a height equal to that from which it was pumped up, the power of the engine and the power of the water-wheel would be nearly equal, the friction of the pump being taken into account.

Whatever the proprietor of the undulating railway may think, 'power' cannot be self-generated. A man who is in a valley cannot get up into a mountain without labor of some kind; and whether the ascent to the mountain be a straight inclined plane, or a number of undulations, will matter very little; but what difference of labor there is will be in favor of the former. When the boy makes his marble bound on the pavement, there is no saving of labor to him, because it happens to bound three times with one exertion of his muscles He is obliged to exert so much the more power. The proposition to gain power by making a carriage go up hill and down hill, instead of on a level, reminds me of a scheme I once saw of a self-moving carriage, which was to go on as soon as it was loaded; and the greater the load the faster it was to travel. The ingenious inventor had heard talk of a wheel within a wheel, and he literally put it into practice—small wheels being contrived to run on a rail within a periphery of large ones, both before and behind a four-wheeled vehicle, and so fixed, by means of guides, that the weight was pressing on the rim of the large wheels, at a considerable height above the ground, in expectation of making them revolve. The inventor had entirely forgotten that while the large wheel was pressed down hill, the small one had to travel up hill, and consequently that it was 'no go.' Perfectly similar is the undulating railway. If the eight-wheeled vehicle could have moved at all, it might have been running even unto this day; and if up hill and down hill *versus* level were a clear gain, it might be improved on till animal and machine power might be dispensed with, and the railway locomotive power of every man might reside in his own fingers. We have not come to that yet. We may exert a great quantity of power in various ways, it is true, but no more power can come out of a thing than we put into it. If we wind up a jack, or a clock, or a watch, the amount of power which have been rapidly given is slowly expended—that is the whole process; but a man would be laughed at who were to assert that the power we had given to the machines increased in quantity while in their progression; and thus should the man be laughed at who asserts that the power of a horse or machine is multiplied by going up and down hill.

Since writing the above I have caused inquiries to be made at the place of exhibition, and am informed that the inventor has gone to Birmingham, I think, for the purpose of setting his scheme going on an undulating railway of three miles in length, to try it on a large scale. I am, sir, yours, &c.,

Junius Redivivus.

The Undulating Railway. By J. W. N. Badnall. [From the London Mechanics' Magazine for April.]

Sir,—I should not have considered it worth my while to have noticed the letter contained in your last number on the subject of '*the un-*

dulating railway,' and signed 'Junius Redivivus,' had it not been accompanied by some remarks of your own, which I feel it necessary to reply to.

As an occasional contributor to your publication, and as a constant reader of it from its commencement, I feel little doubt of your doing me the justice to publish this letter with as little delay as possible.

I am the inventor and patentee of the undulating railway, models of which have recently been exhibited at Manchester and in London, and (however extraordinary it may appear to your correspondent) have engaged the anxious attention and investigation of some of the most scientific men in this kingdom; men who, instead of adopting the ungracious and undigested conclusions of 'Junius Redivivus,' have not considered it a waste of time to endeavor, by formula, diagram, and figures, to resolve the facts which impartial experiments on a small scale have so fully developed.

To convince you, sir, that I am not an individual who, as a '*plotter of absurdities,*' wishes to impose upon public credulity, I have not hesitated to risk any mechanical reputation which I may have earned, by publishing a treatise on the subject of the railway in question, a copy of which I had requested my publishers, Messrs. Sherwood, Gilbert, & Piper, to send to you. In the short work alluded to, I have ventured upon a mathematical explanation of the cause of the advantage derivable from the adoption of *undulating* instead of *horizontal railways.* To that reasoning I beg to call your attention, and in the mean time permit me to assure you that I shall not for one instant defend a fallacy, if any of your correspondents will undertake to establish one. I cannot, however, bring myself to believe, although some '*barren spectators,*' as your correspondent terms them, may be inclined to found their faith on the empty assertions of 'Junius Redivivus,' adorned as they are by corresponding remarks on 'ice hills,' 'Russian mountains,' 'polished fly-wheels,' 'perpetual motion,' 'new fashioned water-wheels,' &c. &c., that such arguments will in any degree satisfy the inquiring minds of the great number of scientific men of declared reputation who *have witnessed* the experiments—who have considered them worthy of reflection—and who, as yet, have not made me acquainted with *the error* into which, if your opinion and your correspondent's be correct, I must (very innocently, I assure you,) have fallen.

I have recently requested the model engine to be returned to the Adelaide Rooms in London. You will, I hope, do me the honor to examine the experiments carefully, and if you find that a much greater velocity is attainable upon an undulating line with a given power than upon a horizontal line with the same power, and that greater weights can be conveyed upon one line than upon the other, I trust to your candor to make such declaration, or to show mathematically wherein the deception or fallacy consists.

'Junius Redivivus' argues as if I talked of *generating power* upon an undulating line. It is enough if I prove that *it can be economized,* or that greater loads can be carried, and a greater velocity be attained, than upon a horizontal line *with equal locomotive power.*

I should indeed be less deserving than I feel myself of the compliment paid me, in your *autographical plate,* by the enrolment of my name among the names of men with whom I never felt that I merited such an association—and as a *civil engineer,* a most unworthy member of the profession which I have recently embraced, were I to endeavor, first to palm a fallacy upon the public, and afterwards to insult science by endeavoring to establish that fallacy by false reasoning.

By way of rendering your correspondent, however, a little more instructive to your readers, I will beg him to inform them—

First, What would be the difference in friction between a carriage of any given weight, say one ton, traversing a curve 100 yards in extent, whose descending and ascending lines incline from the summit level at an average angle of $22\frac{1}{2}$°, and upon a horizontal line of like surface, drawn direct from summit to summit?

Secondly, What would be the difference in the velocity, or (in other words) in the time, which the same body would require to traverse such curve and such horizontal line, supposing it to commence upon the latter at a *maximum* velocity of five yards per second, and to commence the descending line and mount the summit of the ascending line of the curve at the same velocity?

When these questions are answered satisfactorily to your scientific readers, I will enter further into the practicability of my plan, and I hope I shall not find it difficult to prove that the adoption of a succession of curves upon a railway, whose summits are of equal altitude, for the purpose of saving power by the more economical use of steam, and increasing velocity, is not the only useful object of my invention—but that it especially applies to the rising of inclined planes, and to the prevention of excavation and embankments in many instances; while by the adoption of even occasional *single curves* the carriages may proceed under or over public roads, canals, &c. which might otherwise prove serious obstacles to railway lines, and across valleys, which might also prove sources of immense expense.

The esteem with which I have always regarded your useful publication, induces me to take a trouble on this occasion which the unceremonious, and occasionally uncourteous, remarks of your correspondent 'Junius Redivivus' do not, in my opinion, merit. If he can, however, *prove* the fallacy under which I labor, he will not be doing a greater service to the public than to J. W. N. BADNALL.

P. S.—The line of road upon which, through the kindness of Mr. Giles, the engineer, I hope first to try the practical effect of my principle, whether on the level or up inclined planes, is the Newcastle and Carlisle Railway. The result will, I have no doubt, prove that the Rainhill and Sutton inclined planes, which are now the leading obstacles on the Liverpool and Manchester line, may be ascended with a facility which has not hitherto been contemplated.

[We have not yet received the explanatory pamphlet to which Mr. Badnall alludes, nor have we yet had an opportunity of seeing the model of his invention in operation. We can, therefore, say nothing at present either by way of retraction or confirmation of the opinion we have expressed on the subject. When we gave that opinion, we were not aware that Mr. Badnall was the patentee of the 'undulating railway'; and we most freely confess that if any one thing could shake our incredulity respecting it more than another, it would be the circumstance of its having a gentleman of his talents, information, and experience, for its author.—ED. M. M.]

Report of the Engineer in Chief of the Ithaca and Owego Railroad Company.

[Continued from page 580.]

INCLINED PLANES.—By referring to the annexed tables it will be seen that the line thus selected as the *most eligible* route that could be obtained, instead of descending the whole distance of $6\frac{1}{2}$ miles on one regular grade, and that, too, the *maximum* descent, the line adopted is carried on an *undulating grade,* from the summit northerly to the head of the inclined planes, in which distance the descent of the grade northerly exceeds its ascent 77 feet; and, to that amount, reduces the elevation to be overcome; which being deducted from the elevation of the grade for the *road bed* at the summit, (600 feet,) leaves 523 feet for the elevation at the head of the inclined planes above the level of the Cayuga Lake; by taking from this as before, the elevation (12 feet) of the road bed upon the flats at the *foot* of the inclined planes there will be 511 feet of elevation left (*between* the road bed at the foot of the inclined plane and that obtained for it at the head of that plane) to be overcome by stationary power.

After having thus ascertained that the elevation for the road bed at the head of the inclined planes, could, *at most,* be only reduced to 511 feet above the Ithaca flats, the next object to be attended to was the selection of the most eligible *grades* for descending the Ithaca hill with these planes.

The Ithaca, or South hill, upon the face of which these inclined planes must of necessity be constructed, is composed of gray wacke, of the slaty variety, mostly of a loose, friable texture, with occasional veins of a compact texture, suitable for mason work, which approaches in places to within one foot of the surface of the ground.

This circumstance made it the more needful to obtain, if practicable, such a location as required only a *moderate* depth of excavation.

Much care was taken in the examination of this hill to obtain that object; and lines were run, and levels taken over it, from Mr. M'Cormick's mill, the Ithaca Hotel, and Mr. Pelton's quarry, on the east, to the deep ravine ¾ of a mile to the west of Cayuga street.

Levels of *contours* of the hill were also taken at every five or ten feet in elevation, and other lines, amounting together to many miles, were also surveyed and levelled. In this manner the elevation was obtained of the whole face of the hill, and that, too, at points on every important change of its surface.

By means of information thus obtained, various routes and grades were projected and examined, for the purpose of connecting the road upon the Ithaca flats with that at the head of both inclined planes, among which are the following:

1st. An ascending grade of 4° 18′, or one foot rise in $13\frac{1}{3}$ feet of base, ($365\frac{7}{10}$ feet per mile,) was traced along the northern acclivity of the Ithaca hill: beginning at a point in the excavation made by this company in 1830, at the foot of that hill, and near Messrs. Collins & Huntington's brewery, and running thence south-easterly to near the summit of the hill, intersected the present line of railroad $2\frac{6}{10}$ miles from its northerly termination.

The most eligible route that could be obtained for this grade was a *very circuitous one,* and required heavy embankments and deep cuttings through rock; its *straight lines* were short; the *radii* of its *curves* were small, and the line passed over several *streets* and *roads* and through the small settlement or place called "*Michigan,*" where several valuable buildings must have been removed.

The whole length of the inclined planes required to overcome this elevation (on this grade) would have been 7,920 feet, and would have required a proportionate length and weight of rope, number of friction rollers, persons to attend and give telegraphic signals, &c.

The great cost to be incurred in the first construction and future repairs of a railway made on *this line and grade* for an inclined plane at this place, would have been an insurmountable obstacle to its adoption by this company, even if no regard were had to the injury that would have been done to property at, and in the vicinity of, Michigan; the interruption to travel by the almost inaccessible public bridges that must have been built at the numerous streets and roads crossing the track of railway on that side hill, at an elevation above, or depression below, the railroad, of from 12 to 14 feet; or the increased liability to accident from the breakage of carropes upon an inclined plane with *such abrupt curves*; or the cost of communicating by bell or by other signals such a distance, and over such ground; the time of connecting or disconnecting the cars from the rope at the head or foot of the plane, or the increased liability to interruption to commerce, (and consequent loss of toll,) by the breakage of ropes of such great length, taken along such a circuitous route, and over so great a number of friction rollers.

2d. A good route for a part of this inclined plane could have been obtained on a line running from the summit in a direction towards the Ithaca Hotel, till it arrived in the neighborhood of Mr. Pelton's quarry; at which place the elevation of the grade would have been 150 feet above the level of the lake. From this point to the flats at the Ithaca Hotel, or at Mr. M'Cormick's mill, was a distance of only 1500 feet, and the elevation to be overcome 115 feet. At about 300 yards from the Hotel, the rock or hill is 100 feet above the level of the lake; of course, to have terminated the inclined plane in that part of the village of Ithaca would have required such extensive embankments over the streets, and as high as the tops of the buildings, and destroyed so much property, and interrupted the travel in that section of the village to such an extent, as it would have been unreasonable to have expected the inhabitants and proprietors would have submitted to, even if the Company had had the means to have paid them a fair equivalent for their damages. This line and grade could not, therefore, be recommended.

After the most thorough examination of the Ithaca hill, and the various experimental and other lines, run to and over it, from the north as well as from the south, the following line and grade for the inclined planes at that place have been selected as the most eligible (and I might almost venture to say the only one) which the funds of the Company authorize me to recommend to the Directors for their adoption.

The whole elevation to be overcome at the Ithaca hill by stationary power, being, as before mentioned, reduced to 511 feet; and the abrupt descent from every point of that hill to the flats making it necessary to build a high and heavy embankment to arrive at the foot of this plane if run to any point of these flats; it became necessary to select such a place for the termination of this inclined plane, as was unoccupied by buildings or other valuable improvements: this necessity determined the location of the foot of the plane to be *south-west* of the brewery before mentioned; the route*east* of that place having been examined and *rejected.*

The location of the *road* at the *head* of the inclined plane, (being controlled by the ground to the south thereof,) made it needful to have *one* or *more* curves in the plane, provided it was made to terminate *east* of Cayuga street; but if it terminated about 400 yards south-westerly of that street, then it could be taken down the hill on a *straight line* for the whole length of the plane, and this straight line be extended beyond the foot of the plane 831 yards upon the flats.

This straight line was found to be the most eligible that could be obtained for this part of the road; but passing, as it of necessity must, up a steep hill, the face of which is rock, covered in places with earth only a few feet or inches in depth, I have been under the necessity for the present to adopt for it a *grade*, which, although the most eligible that could be obtained within the means of the Company, yet is *considerably steeper* than I would have preferred it; it, however, can be reduced at a future day, when the funds of the Company will enable them to do so.

A plan has been devised, by means of which, it is believed, accidents may be prevented to the cars by the breakage of the car-ropes, ascending or descending these planes.

LOCATION OF THE ROAD.—The general course of the road, from its northerly termination at Cascadilla street on the inlet of the Cayuga Lake in the village of Ithaca, to the northerly end of the bridge built across the Susquehanna River at the village of Owego, is S. 25° 4′ E.*

The distance between the northerly termination of the road, and the bridge across the Susquehanna River at Owego, is, on a straight line, 141,755 feet, or 26 847-1000 miles; on the line of the Railroad it is 151,934 feet, or 28 775-1000 miles; along the Ithaca and Owego turnpike road, is 159,818 feet, or 30 224-1000 miles.

Monumental stones, designating the line and grade of the road from Ithaca to Owego, are to be placed (where not already done) in the centre of the road, at the level of the road grade, at points 500 feet apart, commencing at the north end of the road; they will also be placed (where not already done) at the commencement and termination of each curve and straight line. These landmarks will serve as convenient and cheap guides to the grading, as well as to the laying of the railway: they will also serve as references in the descriptions of the several pieces of ground taken by the Company for the use of the road.

By a resolution of your Honorable Board, dated the 25th day of November, 1831, it was unanimously resolved that the *minimum* breadth of land to be taken for the railroad should be *one hundred feet.*

With this width of 100 feet, the centre and central line of the railroad commences upon lands of Simeon De Witt, Esq., on the Ithaca flats, at a point in the south side of Cascadilla street in the village of Ithaca, 126 feet west of Fulton street, and 110 feet east of the wharf now built along the east side of the basin made at the inlet of the lake.

From this beginning point, *Straight Line No.* 1 runs S. 0° 30′ E. parallel to Fulton street, 977 7-10 feet over lands also belonging to Mr. De Witt, to Station No. 9.777 at the north end of Curve No. 1.

The road bed at the beginning of Straight Line No. 1, has been graded to the level of 5 feet above the Cayuga Lake at its summer height; from thence to the north end of Curve No. 1, it ascends at the rate of 7 39-100 feet per mile, and at that place is 6 37-100 feet above the level of the Cayuga Lake.

Curve No. 1, commences at Station No. 9.777 at the south end of Straight Line No. 1, upon the lands of Simeon De Witt, Esq.; and to arrive at the foot of the inclined plane, bends to the left, with a radius of 2434 feet, for a distance of 1894 feet, to Station No. 28.72 at the north end of Straight Line No. 2, upon lands of Mr. De Witt.

The road for the whole length of this curve ascends at the rate of 7·39 feet per mile, and at its southerly termination is 9 feet above the level of the Cayuga lake. The averaged height of embankment over the flats is 4 7-10 feet.

Straight Line, No. 2, commences at Station No. 28·72, at the south end of curve No. 1, on the lands of Mr. De Witt, and runs S. 44° 30′ E. 2494 feet to Station No. 53·66, at the foot of of the first inclined plane, and 6,687 feet to Station No. 95·595, at the head of the second inclined plane, which is also the north end of curve No. 2, and is upon the lands of John P. Gauntlett; crossing in this distance the lands of Francis A. Bloodgood, Simeon De Witt, John P. Gauntlett, and Luther Gere.

In passing over the Ithaca flats, from Cascadilla street to the foot of the first inclined plane, this road crosses Mill, Buffalo, Seneca, Owego, Green, and Clinton streets, as now laid out upon the ground; and Broad, Washington, and La Fayette streets, which run east and west, and Fulton and Geneva streets, which run north and south, as laid out upon the plan of this village, (all of which may, with moderate embankment, be crossed at the level of the road,) and the viaducts now building for the passage of the Six Mile Creek, and the raceway to the Ithaca flour mill; it then crosses the Spencer road, as now laid out, and arrives at the foot of the inclined plane at a point 5366 feet from the beginning of the road; ascending in this distance at the rate of 14-100 feet per 100 feet, or 7 39-100 feet per mile, for a distance of 5000 feet; and at that place is 12 feet above the level of the Cayuga lake at its summer height. The remaining 366 feet to the foot of the inclined planes is *level, except* a small depression to be made in it for the purpose of aiding the cars in ascending and checking them in descending the planes.

The foot of this inclined plane is about 400 yards southwesterly from the bridge across the Six Mile Creek at Cayuga street in the village of Ithaca, and 114 feet northwesterly of the foot of the Ithaca hill. From this point both inclined planes are, as before mentioned, located on a straight line running south 44° 30′ E. 1733 4-10 feet, to the head of the first plane, and 2460 feet further to the head of the second plane, which is also the north end of curve No. 2,

It will be perceived that there is *no bend* at or near the foot of this plane. The same straight line that passes up both planes S. 44° 30′ E. 4193$\frac{4}{10}$ feet to curve No. 2, at the head of the upper plane, being also continued N. 44° 30′ W 630$\frac{4}{10}$ feet over the Ithaca flats to curve No. 1, (the length of the straight line between Curve No. 1 and Curve No. 2 being 4823$\frac{8}{10}$ feet.)

Although these inclined planes can be made as safe as any other equal ascent, and it is thought that a plan can be devised by means of which they can be made more so: yet, as accidents have happened at inclined planes of the best construction, and of gradual ascent, a prudent foresight suggests the expediency of making, as far as practicable, seasonable and ample provision for *preventing injury* from any accident that may from any untoward circumstance happen upon this part of the Road. With this view of the subject, the advantage of *both planes*, being thus located upon the *same straight line*, and of that straight line being continued such a distance upon the flats *beyond* the foot of the lower plane, cannot but be duly appreciated.

The whole amount of elevation to be overcome at these planes being 511 feet, in a distance of 4193$\frac{4}{10}$ feet, (the foot of the first plane being 12, and the head of the second plane being 523 feet above the level of the lake,) and the natural slope of the hill making it impracticable at a reasonable cost to overcome this height by *two* inclined planes of *equal* elevation, it was deemed most to the interest of the Company to divide the whole elevation between two inclined planes, in such proportions as would give to each a grade that would pass *nearly* along the general slope of the hill or rock, and thus lessen the cost of excavation through it.

In accordance with this plan, the elevation to be overcome by both planes has been so divided that the *first* inclined plane should have a base of 1733.4 feet, and overcome an elevation of 405 feet; ascending this distance on an angle of 13° 9 6-100′ with the horizon; or at the rate of 23 36-100 feet per 100 feet base, which is equal to 1 foot rise to 4 28-100 feet base; and the *second* inclined plane should have a base of 2225.9 feet, and overcome an elevation of 106 feet; ascending this distance on an angle of 2° 43 58-100′ with the horizon; or at the rate of 4 76-100 feet per 100 feet of base, which is equal to 1 foot of perpendicular rise to 21 feet of base. The level space between the planes is 234.1 feet. Making the whole length of both planes 4193.4-10 feet. And the whole amount of elevation overcome, 511 feet, which, with the elevation at the foot of the first plane, 12 feet, gives for the elevation at the head of the second inclined plane 523 feet; and at the head of the first plane 417 feet above the level of the Cayuga Lake.

At the foot of the first and second inclined planes there will be a short descent towards those planes, for the purpose of aiding the cars in ascending, and checking their speed in descending the planes.

The engine house is to be built between the planes.

To make the inclined plane upon these grades, will require an embankment at the foot of the Ithaca Hill, 138 yards in length, with an average height of 19 3-5 feet; the greatest height being 22 3-5 feet. This will bring the road to the beginning of the rock excavation, which extends a distance of 1100 feet with an average depth of 9½ feet, the greatest depth of cutting being 19 3-5 feet; crossing in this distance the ground of Francis A. Bloodgood, Simeon De Witt, and the Beebe Road.

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* For the sake of brevity in describing places along the line of the road, they will, in some instances, be spoken of as if the general course of the road was due north and due south; and distances from the beginning station at the northerly termination of the road, on Cascadilla street, in the village of Ithaca, will be spoken of as distances from Ithaca.

This road (which is a continuation of Cayuga street) will be taken *over* the railroad, by a bridge about 15 or 16 feet in height, above the level of the railway, at that place; here the excavation is made through rock to a depth of 8 feet.

The cut through this rock is made for a double track; it is 22 feet broad at bottom, with a berm on each side, 3 feet in breadth, at 3 feet above the road bed. The side slope of this cut has a battre of one foot in five.

At the middle, or old Owego Road, the rock excavation terminates; and another heavy embankment commences, and extends to the foot of the second inclined plane, a distance of 700 feet, with an average height of 7 64-100 feet; the greatest height being 24 2-10 feet.

This embankment falls upon the ground of John P. Gauntlett, and is about 100 yards easterly of his dwelling house.

It was needful to raise the embankment to this great height, for the purpose of providing a level space of railway between the two planes, for the erection of an engine house, and also for a Depot, for the cars, goods, &c. that might be detained at the head of the first plane, and need protection from the weather, &c.

The earth required to make this embankment, with the necessary slopes and berms, if made only 84 feet broad at top, for a distance of 100 feet, and the remaining 600 feet only 42 feet broad at top, with the usual slopes, will amount to 17,274 cubic yards.

As an engine house is needed at this place, and stone suitable for building can be obtained near the spot, at a moderate cost, (50 cents per perch,) it is believed to be the best economy to build this house, in place of so much embankment as its space may occupy, and enlarge its dimensions so much as to answer for a store house, work shop, &c.

The abundance of stone at command enables me to make a further saving at this place, by carrying up two parallel walls lengthwise of the road, and on both sides of its centre; these side walls to be connected with cross string pieces, to receive and sustain the rails and the cars. The horse path may be made of plank. The space between the walls may be filled up with earth, or left open, and converted into dwellings, or work shops, &c. at the pleasure of the company.

These walls may be extended from the engine house towards the middle or old Owego road, till its diminished height shall be only equal in cost to that of an equal height and breadth of earthen embankment.

The middle road may be taken over the railroad without changing its location, by building a bridge similar to that to be built across the Beebe road; or diverging with this road to the south about 200 feet, it may be taken under the railroad, through a space to be left for that purpose in the walls last mentioned.

The Owego Turnpike Road may be taken under the railroad, without changing its location or the elevation of its surface.

From the foot of the second inclined plane, at the Owego turnpike road, to the head of that plane, the road will require moderate embankment and cutting. The embankment will average $2\frac{4}{16}$ feet in height for 1100 feet, the greatest height being $4\frac{7}{16}$ feet; and the cutting will average $3\frac{9}{16}$ feet in depth for 1100 feet, the greatest depth being 8 feet. The excavation is earth, shell rock, and solid rock.

PRUSSIAN BLUE ON WOOLLENS.—It has gone the round of our papers, several times within the last two years, that a mode of dying blue without indigo was in use on the continent of Europe. This color is merely the application of Prussian blue to yarn and cloth, and has been used very commonly on cotton and silk goods, in this country, for the last five years. The blue produced in this way for the last year, in this country, has probably been equal to that which could be obtained from two hundred chests of Bengal Indigo. Its application to cotton and silk goods has been generally known for some years; but it is only very recently that it has been successfully used on woollen fabrics, owing to the great difficulty in fixing it evenly on the goods. This difficulty has been lately overcome, and I hasten to make it known to the workmen of this country. My instructions may be incomplete, as is almost ever the case with a new discovery, but it will, no doubt, be sufficient to lead our artists to the source of successful application.

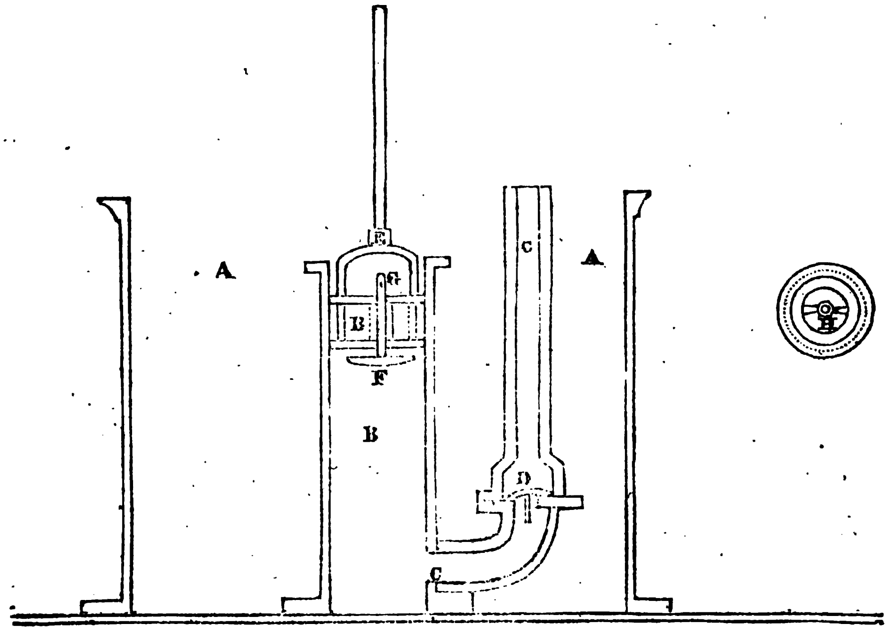
Woollen goods of all kinds have to be prepared by boiling them slowly in lime water. After cleaning them by washing, they are entered into a fresh liquor, containing one ounce of prussiate potash, to each pound of goods. In this they are boiled slowly for ten minutes. They are now to be run through another fresh liquor, containing one ounce of nitrate of iron to each pound of goods, if for a middling blue; but if for a dark blue, more nitrate of iron will have to be used. The color is now on the goods; but it is neither as bright or as even as is required. To improve the color so as to make it light and even, it has to be run through a liquor containing a small portion of sal-enixen, argel, and muriatic acid.

This color is brighter than any indigo blue, and will stand air and acids equally well; but is easily changed by the application of alkalies, on which account it is not commonly employed on such goods as require to be frequently washed with soap. For carpet yarn, horse cloths, flannels, and many other descriptions of goods, it may be used to advantage. It has been applied in England to broad-cloths, and when the color changes in fulling with soap, it is afterwards revived again by a mordant.

For further particulars apply to Wm. Patridge, 64 Cedar street, New-York.

Manganese.—It is perhaps not generally known that there has been discovered in the State of Vermont a mine or bed of Manganese, of a quality superior to the imported article. The manganese mine is in the town of Chittenden, Rutland county, 29 miles from the shore of Lake Champlain, and has been worked since 1826. The manganese is raised from the mine, cleansed from the earthy particles, ground in mills erected for that purpose, and is sent to the New York and other markets in barrels. It is understood that the New York Chemical Company are to be supplied with two hundred tons of this article the present season. The principal use of manganese is for making the chloride of lime or bleaching powders, and for glass. The price of the manganese is between 30 and $40 per ton in market.

We mention this as a single fact, tending to illustrate the influence of our canals in developing and bringing forth the resources of the country.—[Argus.]



Hot Water Pump. By G. M. [From the London Mechanics' Magazine.]

SIR,—I beg the insertion of the annexed plan of a hot water pump:

A A is a square or oblong cistern of cast iron, or any other suitable metal, to contain the pump, but must be deeper than the height of the pump, and be continually kept full of water. B is the barrel of the pump, (I shall not say any thing about the proportions of it,) truly bored, and is to be fixed to the bottom of the cistern. C C is the outlet for the water contained in the pump to the boiler. D is a valve fixed in the elbow of the pipe C C, to stop the water from coming back to the barrel again by the pressure of the steam on it from the boiler. E is a valve or bucket, such as used in other pumps, and to be packed with hemp, or any other suitable packing, in the groove H, made to receive it, with the exception of the spindle valve, F, inverted, and is kept from falling through by a pin placed in the hole G, made in the spindle to receive it. H is a section of the valve E, with a bridge across it to receive the spindle of the valve F.

The action of the pump is as follows: The cistern A A, being full of water, fills the barrel B by running over the top of it. The bucket E, and valve F, being at the top of the barrel B, and ready to be forced down the engine, the water which is between the valve F, and the bottom of the pump, is forced by the action of the bucket E, descending, and valve F closing, through the pipe C; while the valve D, immediately that the bucket has got to the end of its stroke, stops all return of water; then the bucket E is drawn up to the top of the pump, and the water, by its own gravity, fills the pump by the valve F descending as far as the pin; and so the process is repeated.

Your obedient servant, G. M.

P. S.—I am well aware that the pump has the pressure of the air to resist in its upward stroke; but considering the numerous stoppages and delays occasioned by the valves of the pumps now in use, and the uncertainty of their action, I think the pressure of the air in this but a minor consideration when compared with the other.

New Application of Steam.—We have already mentioned the invention, by Mr. Murfree, of Nashville, of a new mode of applying the power of steam directly to the periphery of a wheel, and thus dispensing with the cumbrous, expensive, and bulky apparatus required, upon the old plan, between the generator and the machinery intended to be operated upon. This invention, however, deserves a more extended and elaborate notice. It has only been tried upon a small scale, but as it has, in that form, succeeded beyond expectation, and as the principle must be the same in larger engines, there is no reason to doubt its entire success in its practical application to the business of life. We have examined the model of a saw-mill, and seen it in operation, by means of this new contrivance. The driving wheel is formed, as usual, with arms or spokes inserted in an axis or hub, and supporting the periphery or rim, upon one edge or side of which are placed a number of buckets, proportioned to the size of the wheel, and to the column of steam intended to be applied. One or more pipes, proceeding from the generator, conduct the steam to these buckets, and throw it upon them at an angle of 45°, so that it escapes continually after producing its effect, without any re-action to retard the motion it has created. The application may be made so as to drive the wheel in any direction, vertically, horizontally, or at an inclination.

The wheel in the model we have seen is two feet in diameter. The saw-mill driven by it is constructed upon a proportionate scale, and upon Overman's plan; the supply pump is of the usual construction, and the generator is 36 inches long, and 15 in diameter, furnishing a column of steam three and one-third sixteenths of an inch square, under a pressure of fifteen pounds. The saw of this little machine cuts about twenty-seven square inches of timber a minute, and it is the opinion of the inventor, that the same generator is capable of furnishing a power sufficient to cut regularly forty-eight square inches a minute.

From the experiments already made, it is believed that the generator now used may furnish, upon this plan, one and a half horse power. The wheel, when we saw it in motion, made about 560 revolutions a minute, giving to the periphery a velocity of 3360 feet. The saw made about 280 and the supply pump 140 strokes a minute, the axis of each being about 9 inches in diameter, so that the momentum of the machine may be estimated at about 4000 superficial feet a minute. The great advantage of this invention is the direct application of the power to the wheel, without the necessary intervention of any bulky machinery. So far as we can judge from the experiments made, this important object is fully attained.—[Nashville Banner.]

Babbage on the Economy of Manufactures.

[Continued from page 584.]

ON THE POSITION OF LARGE FACTORIES.

220. It is found in every country, that the situation of large manufacturing establishments is confined to particular districts. In the earlier history of a manufacturing community, before cheap modes of transport have been extensively introduced, it will almost always be found that the article will be manufactured near those spots in which nature has produced the raw material. In the heavier articles, and in those the value of which depends more upon the material than the labor expended on it, this will most frequently be the case. Most of the metallic ores being exceedingly heavy, and being mixed up with large quantities of weighty and useless materials, must be smelted at no great distance from the spot which affords them: fuel and power are the requisites for reducing them; and any considerable fall of water in the vicinity will naturally be resorted to for aid in all the coarser exertions of physical force—for pounding the ore, blowing the furnaces, or for hammering and rolling out the iron. There are indeed peculiar circumstances which will modify this. Iron, coal, and limestone, frequently occur in the same district; but the union of the fuel in the same locality with the ore does not happen with respect to other metals. In Cornwall there exist mines of copper and of tin, but none of coal. The copper ore, which requires the largest quantity of fuel for its reduction, is conveyed by ships to the coal fields of Wales, and is smelted at Swansea; whilst the vessels which convey it, take back cargoes of coal to supply the steam-engines for draining the mines and to smelt the tins, which require, for that purpose, a much less quantity of fuel than copper.

221. Rivers, passing through districts rich in coal and metals, will form the first high roads for the conveyance of weighty produce to stations in which other conveniences present themselves for the farther application of human skill. Canals will succeed, or lend their aid to these; and the yet unexhausted application of steam and gas holds out a hope of attaining almost the same advantages for countries to which nature seemed for ever to have denied them. Manufactures, commerce, and civilization, ever follow the line of new and cheap communications. Twenty years ago, the Mississippi poured the vast volume of its waters in lavish profusion through thousands of miles of countries, which scarcely supported a few wandering and uncivilized tribes of Indians. The power of the stream seemed to set at defiance the efforts of man to ascend its course; and, as if to render the task still more hopeless, large trees, torn from the surrounding forests, were planted in its bottom, forming in some places barriers, in others the nucleus of banks, and accumulating in the same spot, which but for accident would have been free from either, the difficulties and dangers of sand-banks and of rocks. Four months of incessant toil could scarcely convey a small bark with its worn-out crew two thousand miles up this stream. The same voyage is now performed by large vessels impelled by steam, carrying hundreds of passengers, enjoying all the comforts and luxuries of civilized life, in the short period of fifteen days. Instead of the hut of the Indian—and the far more unfrequent log-house of the thinly scattered settlers—villages, towns, and cities, have arisen on its banks; and the same engine, which stemmed the force of these powerful waters, will probably tear from their bottom the obstructions which have hitherto impeded and rendered dangerous their navigation.*

222. The accumulation of many large manufacturing establishments in the same district has a tendency to bring together purchasers or their agents from great distances, and thus to cause the institution of a public mart or exchange. This contributes to increase the information relative to the supply of raw material, and the state of demand for their produce, with which it is necessary manufacturers should be well acquainted. The very circumstance of collecting periodically, at one place, as large a number as possible, both of those who supply the market and those who require its produce, tends strongly to check those accidental fluctuations to which a small market is ever subject, as well as to render the average of the prices paid much more uniform in its course.

223. When capital has been invested in machinery, and in building for its accommodation, and when the inhabitants of the neighborhood have acquired a knowledge of the modes of working at it, reasons of considerable weight are required to cause its removal. Such changes of disposition do, however, occur; and they have been alluded to by the Committee on the Fluctuation of Manufacturers' Employment, as one of the sources interfering most materially with a uniform rate of wages: it is, therefore, of particular importance to the workmen to be acquainted with the real causes which have driven manufactures from their ancient seats.

"The migration or change of place of any manufacturer has sometimes arisen from improvements of machinery not applicable to the spot where such manufacture was carried on, as appears to have been the case with the woollen manufacture, which has, in great measure, migrated from Essex, Suffolk, and other southern counties, to the northern districts, where coal, for the use of the steam-engine, is much cheaper. But this change has, in some instances, been caused or accelerated by the conduct of the workmen, in refusing a reasonable deduction of wages, or opposing the introduction of some kind of improved machinery or process; so that, during the dispute, another spot has, in great measure, supplied their place in the market. *Any violence used by the workmen against the property of their masters, and any unreasonable combination on their part, is almost sure thus to be injurious to themselves.*"*

224. These removals become of serious consequence when the factories have been long established, because a population commensurate with their wants invariably grows up around them. The combinations in Nottinghamshire, of persons under the name of Luddites, drove a great number of lace-frames from that district, and caused establishments to be formed in Devonshire. We ought also to observe, that the result of driving any establishment into a new district, where similar ones have not previously existed, is not merely to place it out of the reach of such combinations, but, after a few years, the example of its success will most probably induce other capitalists in the new district to engage in the same manufacture: and thus, although only one establishment should be driven away, the workmen, through whose combination its removal was effected, will not merely suffer by the withdrawing of that portion of demand for their labor which the factory caused, but the value of that labor itself will be reduced by the competition of a new field of production.

225. Another circumstance, which has its influence on this question, is the nature of the machinery. Heavy machinery, such as stamping-mills, steam-engines, &c., cannot readily be moved, and must always be taken to pieces for that purpose; but where the machinery of a factory consists of a multitude of separate machines, each complete in itself, and all put in motion by one source of power, such as a water-wheel or a steam-engine, then the removal is much less inconvenient. Thus, stocking-frames, lace-machines, and looms, might, with but a small separation of their parts, be transported to more favorable positions.

226. It is of great importance that the more intelligent amongst the class of workmen should examine into the correctness of these views; because, without having their attention directed to them, the whole class may, in some instances, be led by designing persons to pursue a course, which, although apparently plausible, is in reality directly at variance with their own best interests. I confess I am not without a hope that this volume may fall into the hands of workmen, perhaps better qualified than my-

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* The amount of obstructions arising from the casual fixing of trees in the bottom of the river, may be estimated from the proportion of steamboats destroyed by running upon them. The subjoined statement is taken from the American Almanac for 1832: "Between the years 1811 and 1831, three hundred and forty-eight steamboats were built on the Mississippi and its tributary streams. During that period a hundred and fifty were lost or worn out. Of the hundred and fifty lost or worn out were, 63 worn out: 36 lost by snags; 14 burnt; 3 lost by collision: 34 by accidents not ascertained."—Thirty-six, or nearly one fourth, being destroyed by accidental obstructions!

* This passage is not printed in Italics in the original; but it has been thus marked in the above extract, from its importance, and from the conviction that the most extended discussion will afford additional evidence of its truth.

self to reason upon a subject which requires only plain common sense, and whose powers are sharpened by its importance to their personal happiness. In asking their attention to the preceding remarks, and to those which I shall offer respecting combinations, I can claim only one advantage over them, namely: that I never have had, and in all human probability never shall have, the slightest pecuniary interest, to influence even remotely, or by anticipation, the judgments I have formed on the facts which have come before me.

ON OVER-MANUFACTURING.

227. One of the natural and almost inevitable consequences of competition is the production of a supply far larger than the demand requires. This usually arises periodically; and it is equally important, both to the masters and to the workmen, to prevent its occurrence, or to foresee its arrival. In situations where a great number of very small capitalists exists—where each master himself works and is assisted by his own family, or by a few journeymen—and where a variety of different articles are produced—a curious system of compensation has arisen, which, in some measure, diminishes the extent to which fluctuations of wages would otherwise reach. This is accomplished by a species of middle-men or factors, persons possessing greater or less capital, who, whenever the price of any of the articles in which they deal is greatly reduced, purchase it at a low price on their own account, in the hopes of selling it at a profit when the market for it is better. These persons, in ordinary times, act as salesmen or agents, and make up assortments of goods at the market price, for the use of the home or foreign dealer. They possess large warehouses, in which to make up their orders, or keep in store articles purchased during periods of depression: thus acting as a kind of fly-wheel in equalizing the market price.

228. In the greater establishments, the effect of over-manufacturing is different. When an over-supply has reduced prices, one of two events usually occurs: the first is a diminished payment for wages; the other is a diminution of the number of hours during which the laborers work, together with a diminished rate of wages. In the former case production continues to go on at its ordinary rate: in the latter, the production itself being checked, the supply again adjusts itself to the demand as soon as the stock on hand is worked off, and prices then regain their former level. The latter course appears, in the first instance, to be the best both for masters and men; but there seems to be a difficulty in accomplishing this, except where the trade is in few hands. In fact, it seems to be necessary, for its success, that there should be a combination amongst the masters or amongst the men; or, what is always far preferable to either, a mutual agreement for their joint interests. But a combination among the men is difficult, and is always attended with the evils arising from the ill-will which exists against any who, in the perfectly justifiable exercise of their judgment, are disposed not to act with the majority. The combination of the masters is on the other hand unavailing, unless the whole body of them agree: for if any one master can procure more labor for his money than the rest, he must be able to undersell them.

229. If we look only at the interests of the consumer, the case is different. When too large a supply has produced a great reduction of price, it has opened the consumption of the article to a new class, and has increased the consumption of those who previously employed it: it is, therefore, against the interest of both these parties that a return to the former price should occur. It is also certain, that by the diminution of profit which the manufacturer suffers from the diminished price, his ingenuity will be additionally stimulated; and that he will apply himself to discover other and cheaper sources for the supply of his raw material—to contrive improved machinery, which shall manufacture it at a cheaper rate—or to introduce new arrangements into his factory, which shall render the superintendance of it more perfect. In the event of his success by any of these courses, or by their joint effects, a real and substantial good will be effected. A larger portion of the public will receive advantage from the use of the article, and they will procure it at a lower price; and the manufacturer, although his profit per cent. on each operation is reduced, will yet, by the more frequent returns on the larger produce of his factory, find his real gain per cent., at the end of the year, nearly the same as it was before; whilst the wages of the workman will return to their level, and both the manufacturer and the workman will find the fluctuations of demand less considerable, from being dependent on a larger number of customers

230. It would be highly interesting, if we could trace, even approximate, through the history of any great manufacture, the effects of gluts in producing improvements in machinery, or in methods of working; and if we could show what addition, to the annual quantity of goods previously manufactured, was produced by each alteration. It would probably be found, that the increased quantity manufactured by the same capital, when worked with the new improvement, would produce nearly the same rate of profit as other modes of investment.

231. Supposing new and cheaper modes of producing not to be discovered, and that the production continues to exceed the demand, then it is apparent that too much capital is employed in the trade; and after a time, the diminished rate of profit will drive some of the manufacturers to other occupations. What particular individuals will leave it, must depend on a variety of circumstances. Superior industry and attention will enable some factories to make a profit rather beyond the rest; superior capital in others will enable them, without these advantages, to support competition longer, even at a loss, with the hope of driving the smaller capitalists out of the market, and then re-imbursing themselves by an advanced price. It is, however, better for all parties, that this contest should not last long; and it is important, that no artificial restraint should interfere to prevent it. An instance of such restriction and of its injurious effect occurs at the port of Newcastle, where a particular act of Parliament requires that every ship shall be loaded in its turn. The Committee of the House of Commons, in their Report on the Coal Trade, state that, "Under the regulations contained in this act, if more ships enter into the trade than can be profitably employed in it, the loss produced by detention in port, and waiting for a cargo, which must consequently take place, instead of falling, as it naturally would, upon particular ships, and forcing them from the trade, is now divided evenly amongst them; and the loss thus created is shared by the whole number."—*Report*, p. 6.

232. It is not pretended, in this short view, to trace out all the effects or remedies of over-manufacturing; it is a difficult subject, and, unlike some of the questions already treated, requires a very extensive combination of the relative influence of many causes.

INQUIRIES PREVIOUS TO COMMENCING ANY MANUFACTORY.

233. There are many inquiries which ought always to be made previous to the commencement of the manufacture of any new article. These chiefly relate to the expense of tools, machinery, raw materials, and all the outgoings necessary for its production,—to the extent of the demand which is likely to arise,—to the time in which the circulating capital will be replaced,—and to the quickness or slowness with which the new article will supercede those already in use.

234. The expense of tools and of new machines will be more difficult to ascertain, in proportion as they differ from those already employed; but the variety in constant use in our various manufactories is such, that few inventions now occur in which some considerable portion may not be found resembling others already constructed. The cost of the raw material is usually less difficult to determine, but there occasionally arise cases in which it becomes important to examine whether the supply, at the given price, can be depended upon: for in the case of a small consumption, the additional demand arising from a factory may produce a considerable temporary rise in price, although the same circumstance may ultimately reduce its price.

235. The quantity of any new article likely to be consumed is a most important subject for the consideration of the projector of a new manufacture As these pages are not intended for the instruction of the manufacturer, but rather for the purpose of giving a general view of the subject, an illustration of the way in which such questions are regarded by practical men, will, perhaps, be most instructive. The following extract from the evidence given before a Committee of the House of Commons, in the Report on Artizans and Machinery, shows the extent to which articles, apparently the most insignificant, are consumed, and the view which the manufacturer takes of them.

The person examined on this occasion was Mr. Ostler, a manufacturer of glass beads and other toys of the same substance, from Birmingham. Several of the articles made by him were placed upon the table, for the inspection of the Committee of the House of Commons, which held its meetings in one of the committee-rooms.

"*Question.* Is there any thing else you have to state upon this subject?

"*Answer.* Gentlemen may consider the articles on the table as extremely insignificant; but perhaps I may surprise them a little by mentioning the following fact. Eighteen years ago, on my first journey to London, a respectable looking man in the city asked me if I could supply him with dolls' eyes, and I was foolish enough to feel half offended; I thought it derogatory to my new dignity as a manufacturer, to make dolls' eyes. He took me into a room quite as wide, and perhaps twice the length of this, and we had just room to walk between stacks from the floor to the ceiling, of parts of dolls. He said, 'these are only the legs and arms; the trunks are below.' But I saw enough to convince me, that he wanted a great many eyes; and as the article appeared quite in my own line of business, I said I would take an order by way of experiment; and he showed me several specimens. I copied the order. He ordered various quantities, and of various sizes and qualities. On returning to the Tavistock Hotel, I found that the order amounted to upwards of £500. I went into the country, and endeavored to make them. I had some of the most ingenious glass toy makers in the kingdom in my service; but when I showed it to them they shook their heads, and said they had often seen the article before, but could not make it. I engaged them by presents to use their best exertions; but after trying and wasting a great deal of time for three or four weeks, I was obliged to relinquish the attempt. Soon afterwards I engaged in another branch of business (chandelier furniture), and took no more notice of it. About eighteen months ago I resumed the trinket trade, and then determined to think of the dolls' eyes; and about eight months since, I accidentally met with a poor fellow, who had impoverished himself by drinking, and who was dying in a consumption, in a state of great want. I showed him ten sovereigns, and he said he would instruct me in the process. He was in such a state that he could not bear the effluvia of his own lamp; but though I was very conversant with the manual part of the business, and it related to things I was daily in the habit of seeing, I felt I could [illegible] nothing from his description. (I mention [illegible] to show how difficult it is to [illegible]scription the mode of working.) He took me into his garret, where the poor fellow had economized to such a degree that he actually used the entrails and fat of poultry from Leadenhall market to save oil (the price of the article having been lately so much reduced by competition at home.) In an instant, before I had seen him make three, I felt competent to make a gross; and the difference between his mode and that of my own workmen was so trifling, that I felt the utmost astonishment.

"*Quest.* You can now make dolls' eyes?

"*Ans.* I can. As it was eighteen years ago that I received the order I have mentioned, and feeling doubtful of my own recollection, though very strong, and suspecting that it could [not] have been to the amount stated, I last night took the present very reduced price of that article (less than half now of what it was then,) and calculating that every child in this country not using a doll till two years old, and throwing it aside at seven, and having a new one annually, I satisfied myself that the eyes alone would produce a circulation of a great many thousand pounds. I mention this merely to show the importance of trifles, and to assign one reason, amongst many, for my conviction, that nothing but personal communication can enable our manufactures to be transplanted."

236. In many instances it appears to be exceedingly difficult to estimate the sale of an article, or the effects of a machine: a case, however, occurred in a recent inquiry, which, although not quite appropriate as an illustration of probable demand, is highly instructive as a guide in such inquiries. A committee of the House of Commons was appointed to inquire into the tolls proper to be placed on steam carriages; a question, apparently, of difficult solution, and one on which widely different opinions had been formed, if we may judge by the very different rate of tolls imposed upon such carriages by different "turnpike trusts." The principles on which the committee conducted the inquiry were these: They first endeavored to ascertain, from competent persons, the effect of the atmosphere alone in deteriorating a well constructed road. The next step was to determine the proportion in which the road was injured, by the effect of the horses' feet compared with that of the wheels. Mr. Macneill, the superintendant under Mr. Telford, of the Holyhead roads, was examined, and proposed to estimate the relative injury, from the comparative quantities of iron worn off, from the shoes of the horses, and from the tire of the wheels. From the data he possessed respecting the consumption of iron for the tire of the wheels, and for the shoes of the horses, of one of the Birmingham day coaches, he estimated the wear and tear of roads arising from the feet of the horses to be three times as great as that arising from the wheels. Supposing repairs amounting to one hundred pounds to be required on a road travelled over by a fast coach at the rate of ten miles an hour, and the same amount of injury to occur on another road, used only by waggons moving at the rate of three miles an hour, Mr. Macneill divides the injury in the following proportions:

	Fast Coach.	Heavy Waggon.
Injury arising from—		
Atmospheric changes	20	20
Wheels - - -	20	35.5
Horses' feet drawing	60	44.5
Total Injury	100	100

One of the results of these experiments is, that every coach which travels from London to Birmingham distributes about eleven pounds of wrought iron along the line of road between those two places. The committee agree that "The only ground on which a fair claim to toll can be made, on any public road, is to raise a fund, which, with the strictest economy, shall be just sufficient, first, to repay the expense of its original formation; secondly, to maintain it in good and sufficient repair." Supposing it also to be ascertained that the wheels of steam-carriages do no more injury to roads than other carriages of equal weight travelling with the same velocity, the committee now possessed the means of approximating to a just rate of toll for steam-carriages.

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 27th of August to the 16th day of September, 1833, *inclusive.*

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
August 27..	6 a. m.	69	29.82	SW	light	WSW	fair
	10	77	29.78	..	..	..	..
	2 p. m.	85	29.70	..	moderate	WSW / WNW	..
	6	78	29.73	..	..—gale	WSW	.. —gale at 8, from NW
	10 p. m.	74	29.78	SW—NW	fresh	..	..
" 28..	6 a. m.	63	29.83	..	..	WSW / NNW	..
	10	68	29.90	NNW	..	..	..
	2 p. m.	68	29.90	N	moderate	..	..
	6	66	29.90	..	..	..	..
	10	62	29.96	..	..	WSW	..
" 29..	6 a. m.	56	30.00	..	light	..	..
	10	62	29 99	WSW	..	.. / W	..
	2 p. m.	68	29.98	NW	fresh—mod.	W & NW	hail storm at 2, without thunder—fair
	6	60	30.03	N by W	moderate	W	fair
	10	54	30.10	..	..		clear
" 30..	6 a. m.	53	30.20	..	..	W	fair
	10	58	30.22	..	light	..	..
	2 p. m.	68	30.21	S	moderate	..	..
	6	64	30.18	..	..	..	..
	10	63	30.19	..	..	..	..
" 31..	6 a. m.	63	30.13	SW—WSW	..	W by S	cloudy —rain from 8 to 11
	10	65	30.12	WSW—SSW	..	..	rain —cloudy
	2 p. m.	70	30.06	SW	..	..	cloudy
	6	71	29.98	..	..	W—W by N	.. —clear —cloudy
	10	68	29.97	..	..	W by N	..
Septem. 1..	6 a. m.	68	29.87	WSW	..	..	fair—high haze from W by N
	10	76	29.88	W	..—fresh	..	.. — ..
	2 p. m.	81	29.89	NNW	fr'h—strong	..	..
	6	70	29.97	..	gale	..	.. —gale from NNW
	10	62	30.06	..	fresh	..	..
" 2..	6 a. m.	64	30.10	..	moderate		clear
	10	66	30.10	..	..	NNW	fair—light scattering scuds from NNW
	2 p. m.	70	30.09	..	light	..	..
	6	66	30.08	..	..	..	..
	10	63	30.11		..	W by N	cloudy
" 3..	6 a. m.	58	30.17	ENE—E	..	WNW	..
	10	66	30.19	SE—S	..	..—SW	..
	2 p. m.	72	30.15	S—WSW	..	WSW	..
	6	67	30.10	WSW	..	..	..
	10	66	30.08	S	moderate	..	..
" 4..	6 a. m.	67	30.00	SW	..	..	..
	10	75	29.99	..	light	..	fair
	2 p. m.	83	29.95	..	..	..	..
	6	78	29.90	..	..	WNW / SW	.. —high cirrus haze from WNW
	10	75	29.91	..	..	SW	..
" 5..	6 a. m.	74	29.92	..	moderate	WSW / SW	..
	10	80	29.95	WSW	..	WSW	..
	2 p. m.	84	29.97	W by S	..	W by S	..
	6	81	29.98	SW	..	..	.. —brilliant aurora borealis at 8½—gale [at Buffalo
	10	76	30.04	WSW	light	..	..
" 6..	6 a. m.	69	30.16	W by S	..	WSW	..
	10	76	30.17	W	..	..	..
	2 p. m.	82	30.14	WSW	..	..	.. —cloudy
	6	76	30.11	..	..	..	cloudy
	10	72	30.10	..	..	..	.. —fair—aurora borealis at 10½—gale [at Quebec
" 7..	6 a. m.	67	30.17	WNW	..	WNW	fair
	10	74	30.20	NW—W by S	..	..	.. —brilliant parhelion circles about [the sun
	2 p. m.	76	30.16	WSW	mod.—fresh	W by S	cloudy
	6	74	30.12	..	moderate	..	.. —rain
	10	70	30.13		..		rain
" 8..	6 a. m.	60	30.01	NE by E	..—fresh	ENE	..
	10	62	30.00	NE	fresh—mod.		.. —rainy
	2 p. m.	63	30.03	..	moderate	NE	cloudy—scuds from NE
	6	62	30.08	NNE	..	NE by N	.. —fair
	10	59	30.18		..		fair
" 9..	6 a. m.	60	30.19	NNE	..	ENE	cloudy
	10	64	30.17	..	..	..	fair —cloudy
	2 p. m.	67	30.17	SE	..	ESE / NW	cloudy —fair —cloudy
	6	65	30.14	..	..	ESE	fair
	10	63	30.10	..	light	..	cloudy
" 10..	6 a. m.	65	29.98	SSW	..	SW	..
	10	70	29.92	SW	..	..	.. —fair —cloudy
	2 p. m.	73	29.87	..	..	WSW	fair
	6	72	29.83	..	..	..	..
	10	68	29.90	..	..	.	..
" 11..	6 a. m.	60	30.01	NNW	..	..	..
	10	65	30.02	..	moderate	.. / NW	..
	2 p. m.	70	30.01	NW	..	WNW	..
	6	67	30.04	..	..	W	..
	10	62	30.10		..		..
" 12..	6 a. m.	59	30.17	NNE		W by S	cloudy
	10	65	30.20	..—W by N	light	WSW	.. —rain
	2 p. m.	57	30.18	N by W to W	..	.. / NNW	rainy —fair at W
	6	55	30.19	..	..	WSW	fair
	10	54	30.22		..		clear
" 13..	6 a. m.	50	30.28	N by W		WSW—NNW	.. —fair
	10	56	30.31	..—NNW	moderate	N by W	fair
	2 p. m.	59	30.30	NNW	..		..
	6	58	30.27	..	..		..
	10	54	29.27		..		clear
" 14..	6 a. m.	49	30.24	NNW—WSW			..
	10	58	30.25	WSW—W by S	light		..
	2 p. m.	65	30.06	W by S	moderate		..
	6	62	30.08	WSW	..		..
	10	59	30.07		..		..

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Sept'r 15..	6 a. m.	56	30.08	W by S	light	W by S	fair
	10	63	30.10	NW—WSW	..	..	..
	2 p. m.	68	30.05	SW—S	..	..	..
	6	65	30.02	S—WSW	..	..	.. —haze clouds
	10	62	30.03		..	..	..
" 16..	6 a. m.	56	30.11	NNW	moderate	NNE	.. —light scuds from NNE
	10	63	30.18	NNE		..	..
	2 p. m.	67	30.17	..	light	..	..
	6	65	30.18	..	..	..	..
	10	63			..	..	..

Average temperature of the week ending Monday, September 2, 66°.82.
Do. do. do. do. do. 9, 70°.37.
Do. do, do. do. do. 16, 61°.72.

Arithmetical mean of the thermometer for the month of August, 71°.42.

Maximum height of the barometer in August, 30.22 in.—Minimum, 29.70 in.—Range, 0.52 in.

The observations of winds for August result as follows: From the North-Eastern quarter, including N. 28½—from the South-Eastern, including E. 30½—from the South-Western, 59—from the North-Western, 31.

The observations of the higher currents, as indicated by the clouds, result as follows: From the North-Eastern quarter, during 1½ periods of observation—from the South-Eastern during 3½—from the South-Western, 83½—from the North-Western, 35½.

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of July, 1833—(*Latitude* 31.10 *N.*, *Longitude* 91.59 *W. nearly.*)

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.		*Thermometer.*			*Wind.*	*Weather, Remarks, &c.*	
1833.		Morn'g.	Noon.	Night.			
July	1	73	89	83	calm	clear—light flying clouds—Red River falling	
"	2	73	89	82	..	.. —evening wind W—ocre grown for use, and cayenne pepper ripe	
"	3	72	80	80	N—high	.. all day—pulled fodder	
"	4	68	84	78	N—light	.. ..	
"	5	67	86	78	calm	.. .. —planted pole and bunch beans	
"	6	72	88	83	SE	.. .. —bent down corn	
"	7	76	89	80	calm	.. —evening cloudy—heavy thunder and light shower	
"	8	72	90	83	SW—light	.. —	
"	9	79	91	80	W	.. — .. gale from W—heavy thunder and light shower	
"	10	74	90	83	..	.. all day—planted corn-field peas	
"	11	73	90	83	W—light	.. ..	
"	12	74	90	79	calm	.. —evening wind S—at 5 p. m. thunder shower	
"	13	73	88	77	..	.. — .. .. —at 4 p. m.	
"	14	74	89	79	..	.. — .. .. N—at 6 p. m.	
"	15	74	87	77	NE	cloudy all day	
"	16	73	87	79	..	clear—flying clouds	
"	17	70	84	81	..	.. — .. .. —evening calm	
"	18	71	90	82	calm	..	
"	19	74	91	82	SE—light	..	
"	20	73	90	80	calm	.. —night cloudy and thunder, no rain	
"	21	75	90	78	..	.. —at 5 p. m. heavy thunder shower from S	
"	22	74	88	82	NE—light	..	
"	23	74	91	82	calm	.. —evening wind SE, light	
"	24	75	91	82	..	.. — .. .. S, ..	
"	25	72	89	82	..	..	
"	26	73	90	83	S—light	..	
"	27	73	91	84	calm	..	
"	28	73	92	86	..	..	
"	29	76	93	77	W	.. —evening heavy thunder shower	Red River has fell this month 4 feet 10 inches, and is now 5 feet 8 inches below high water mark of 1828.
"	30	74	86	81	..	.. —flying clouds	
"	31	76	84	76	..	cloudy—showers	

City of Philadelphia.—As a proof of the prosperity of Philadelphia, the enterprize and spirit of her citizens, the public improvements in progress, and the anticipated internal advantages in our city, the Commercial Herald had recently two articles on the local statistics of our city, chiefly relative to the public buildings or works recently completed or now in preparation. We extract the list, as compiled for the Philadelphia Gazette, with the computed cost of each building or work:

The Fairmount Water Works cost	$2,063,000
Bank of the United States - -	413,000
Bank of Pennsylvania - - -	235,000
Girard Bank - - - -	250,000
Philadelphia Bank - - -	50,000
Mint - - - - - - -	175,000
Arcade - - - - - -	162,000
University, (new buildings only,) -	60,000
Chesnut street Theatre - -	75,000
Arch street Theatre - - -	63,000
Franklin Institute - - -	34,000
Schuylkill Permanent Bridge -	300,000
Upper Ferry Bridge, Fairmount, -	110,000
Arsenal on the Schuylkill, below South street, - - - - - -	150,000
First Presbyterian Church, Washington Square, - - - - - -	55,000
St. Andrew's Church, 8th, above Spruce street, - - - - - -	65,000
City Prison, corner Broad and Arch sts.	50,000
Sixth Presbyterian Church, Spruce st.	30,000
Baptist Church, Sansom street, -	33,000
Twelfth Presbyterian Church, 12th and Walnut streets, - - -	30,000
American Sunday School Union -	42,600
Baptist Church, Spruce street, -	25,000
Custom House and Stores - -	97,100
Farmers' and Mechanics' Bank, -	50,000
Commercial Bank, - - -	27,000

To these may be added the Pennsylvania Institution for the Deaf and Dumb, Academy of Fine Arts, Academy of National Sciences, Masonic Hall, City Library, Orphan's Asylum, Widow's Asylum, Walnut st. Theatre, Pennsylvania Hospital, Almshouse, Hall of Independence, and a long list of other public buildings, and upwards of one hundred churches, the cost of which we are unable to state.

The following Public Buildings are now in progress:

New Exchange, to be completed next year, architect's estimate - -	$250,000
Naval Asylum, to be completed this season, - - - - - -	250,000
Penitentiary, to be completed this season,	510,000
County Prison - - - - -	228,000
Will's Hospital, for the Lame and Blind, to be completed this season, -	50,000
Almshouse, completed next year, 7 to	800,000
Bricklayer's Hall - - - - -	11,000
Moyamensing Hall - - - -	13,000
Central Presbyterian Church, estimate	58,000
South front of Girard's Square, sixteen houses, 4 stories high, with marble basements, - - - - - -	256,000
North side of Girard's Square, twenty-two houses, - - - - -	200,000
Railroad in Broad, from Vine to South street, - - - - - -	60,000
Girard College, just commenced, architect's estimate - - - - -	$90,000
Public School, Front, near Pine street,	10,000
Girard appropriation for improving the eastern front of the city - -	500,000

From this statement it will be seen that the cost of the Public Improvements in progress at this time amount to nearly *four millions and a half of dollars.*

And on the assessed value of real estate in the city and county of Philadelphia—excluding all the public buildings, all the churches, the squares, burying grounds, &c. none of which are subject to taxation—the Herald has been able to ascertain the average value:

In the City and Liberties -	$95,063,057 50
Penn township, Germantown, Roxborough, Bristol, Oxford, Byberry, Moreland, Lower Dublin, Blockley, and Kingsessing, - - - -	11,872,350 00
Total, - - - -	$106,935,407 50

Manufacture of Cotton in the United States.—The New-York Mercantile Advertiser contains the subjoined interesting article:

We proceed according to our promise, to give further statements of the state of the Cotton manufactured in the United States, in 1831, as collected by the Committee of the New-York Convention. In our paper of Saturday last we showed that there were in twelve States of the Union, 795 cotton mills, with a capital of 40,714,984 dollars, manufacturing annually 77,751,316 lbs. of Cotton, or 214,882 bales of 361$\frac{86}{100}$ lbs. each.

Number of Spindles - - -		1,246,903
Do. of Looms - - -		33,506
Pounds of Yarn sold - - -		10,642,000
Yards of Cloth made - - -		230,461,900
Pounds of Cloth - - -		59,604,925
Hands employed—Males	18,539	
Females	38,927—	57,466
Pounds of Starch used - - -		1,641,253
Barrels of Flour for sizing - -		17,245
Cords of Wood burnt - -		46,519
Tons of Coal do. - -		24,420
Bushels of Charcoal burnt - -		9,205
Value of other articles consumed not enumerated - - - - -		$599,223
Spindles then building - -		172,924
Gallons of Oil consumed - -		300,338
Hand Weavers - - -		4,760
Total dependents - - -		117,626
Annual value of Cotton Manufactures - - - - - -		$26,000,000
Aggregate or total annual amount of wages paid - - - - -		$10,294,944

That there may be no doubt as to the accuracy of these statements, we give the names of the following gentlemen, through whose means the accounts were collected from the manufacturers in the different States, viz.: Maine and New-Hampshire, Lloyd W. Wells and John Williams; Massachusetts and Vermont, Robert Rogerson & Patrick T. Jackson; Rhode Island, Jas. De Wolf, James F. Simmons and Charles Jackson; Connecticut, J. H. De Forest; New-York, E. B. Sherman, James Wilde and Richard P. Hart; New-Jersey, Kentucky, Ohio and Indiana, David Holsman and Mark W. Collet; Pennsylvania, Delaware and Tennessee, Levi Waln and Alexander Breckenridge; Maryland and Virginia, Columbus James, Columbus O'-Donnell and J. W. M'Culloch.

A machine has been invented in Jefferson co., N. Y., for milking cows. If this plan of labor saving machinery, has the same effect that other modern improvements have, butter that is now worth 10 cts. per pound will fall to two pence, and cheese may be had without price.—[Western (Ohio) Intelligencer.]

Large Fruit.—We were yesterday presented, by M. Reuben Edgerton, of Pompey, with a basket of plums, some of which we found, on measuring, to be 6 3-4 inches in circumference. Mr. E. informs us that he has raised this season, not less than 120 bushels, comprising about thirty different varieties of plums.—[Cazenovia Monitor.]

NEW-YORK AMERICAN.

SEPTEMBER 14, 16, 17, 18, 19, 20—1833.

LITERARY NOTICES.

The American Quarterly Review, No. XXVII. Philad. Key & Biddle: New York, G. & C. & H. Carvill.—This number comes to us from new publishers in Philadelphia, Messes. *Key & Biddle*, but under the same editorial auspices; and so we are happy to learn it is to remain.

The contents of this number are—I, on the Life and Writings of Governor Livingston, by Theodore Sedgwick, Jr,; II, on the Life and Speeches of Wm. Windham; III, on Slavery in the District of Columbia; IV, on Poor Laws; V, on the Narrative of Silvio Pellico; VI, on Goodrich's Geography; VII, on Professor Felton's edition of Homer; VIII, on the Works of Joanna Baillie; IX, on Roscoe's Life and Writings; and X, on the Report of Messrs. De Beaumont and De Tocqueville, respecting the Penitentiary System in the United States.

Of these various papers, we have only time to notice two, the third and the fourth.

It is the most unreasonable pretention in the world, indulged in too generally at the South, that because the non-slaveholding States do, upon deliberate advisement, abstain, and desire to abstain, from any discussions or proceedings that might be construed into an interference with the rights or feelings of the owners of slaves in the slaveholding States—they are, therefore, to be debarred from removing the stain and blight of slavery from that spot in our common country, where all meet upon a common footing,—the District of Columbia. There is the seat of Government of this great and free Republic; and there, if anywhere, should every trace disappear of an institution, so palpably at war with all our principles of liberty and equality, as slavery. It is, therefore, well urged in the annexed extract from the second article, and sustained by ample proofs, in the pages whence it is taken, that duty requires of Americans the abolition of slavery in the District:

> The existence of slavery in any part of the United States, is probably a subject of frequent and bitter reflection to every patriot and philanthropist. The citizens of the northern section of the country, however, though they see and lament the extent of the evil in the southern states, have their feelings perpetually chilled by the consciousness that all their efforts to remove or alleviate the disease which oppresses that quarter of our land, must be indirect and operate slowly. Many too of our most respectable citizens think that any discussion in the northern states, of the subject of slavery as it exists in the southern states, is an improper interference with their institutions.
>
> But there is one part of the country where slavery is allowed, in regard to which the citizens of the north have not only a right to indicate and complain of the evil, but a great duty to perform of active exertion for its suppression. We refer to the District of Columbia. This district now is, and probably long will remain, under the exclusive jurisdiction of the General Government. We dispute the assertion that slavery in this district, is the business of the southern states more than of the northern. It is the common concern of the whole nation. Slavery exists in that district by the permission of the government of United States. The responsibility of tolerating the institution there is national, and shared by the inhabitants of the northern states, equally with those of the southern.
>
> A little attention to the history and present condition of this district, will, we believe, convince any candid mind that slavery ought to be abolished there. This conclusion does not rest solely or even chiefly upon arguments which will apply to slavery in the southern states, but upon others also which apply specially to the District.

The next article, on Poor Laws, is one meriting undivided attention. We are so thoroughly copyists—with all our claim to unshackled independence both of mind and political institutions—of European, and particularly English, models, that, like the accurate Chinese tailor, to whom an old coat was sent for a pattern, we copy patches and all. The English system of poor laws exists in our country, where it never should have existed;—where there never was the palliation for them, which excess of population alone can furnish. These laws are working their invariable effect here as elsewhere, and create the misery, the helplessness, the improvidence, and the dependence, they profess to provide against. If it be possible, and while the evil is yet susceptible of remedy, let it be eradicated. We fully concur in the annexed conclusions of this able article:

> We are not prepared to recommend a sudden and immediate repeal of the Poor Laws. We would proceed by gradually establishing almshouses and farms—enforcing a strict prohibition of ardent spirits—and absolutely refusing all relief out of the house. The next step would be to put the almshouse under the care of a contractor, who would have the stimulus of private interest as well as public duty, to urge him to the due enforcement of the best discipline and management. Afterwards, all relief might be denied to the able bodied—the farm worked by hired labourers, and the aged, and sick, and children, alone supported by the public. When a healthful tone should have been restored to the labouring classes by these means, the further reception of children into the asylum might be refused. Parents who had again learnt to rely for their own support upon their own industry, would certainly, in this country, find no difficulty in also supporting their children. Provision for orphans should be continued if necessary, which we apprehend would scarcely be the case in this district, where there are already several orphan asylums, and where the munificent bequest of Stephen Girard for the benefit to that class, is soon to be effectualy applied to their relief. A shelter with medical attendance for the really indigent sick, should never be refused. It will be well for the country when our almshouses shall be converted into mere hospitals. The domestic ties and affections would be redintegrated among the poor.—The children who had been maintained by the labour of their parents, would themselves in turn cheerfully support and cherish those parents, when age or infirmity should have rendered them helpless. But would there be no poverty—no distress—no necessity for relief?—Yes, there would be all those, and to an extent sufficient to afford scope for the liberal exercise of the most virtuous of all virtues—charity.—The demands upon private charity would be much fewer and smaller than they are now, but they would not—they never can entirely—cease. There will always be scope enough for "gentle deeds of mercy," and opportunities,
>
> > ——"to inquire the wretched out,
> > And court the offices of soft humanity;—
> > To shelter and give raiment to the naked,
> > To reach out bread to feed the crying orphan,
> > And mix the pitying tears with those that weep:"
>
> Contrast the blessed scene of prosperous industry, virtue, domestic bliss, and benevolence, which is generally, and which might be universally exhibited in this country—contrast this scene with the idleness and profligacy. the infamy and dissoluteness of males and females, the hundreds of bastards, and the thousands of drunkards of both sexes, all now directly encouraged by the expenditure of a vast public fund—contrast, in fine, the comfort, cleanliness, and happiness. of an honest and industrious family, living and thriving by the labour of its members, with the filth, misery, loathsomeness and vermin—the insensibility to all gentle affections, and the greedy selfishness of the legal pauper, and it will be a source of wonder that there should not be formed a general determination to root out the accursed system, which day by day, and year by year, is visibly corrupting the morals, and, and destroying the industrious habits, prosperity, and soundness of the people. We rejoice in the belief, that public opinion is daily gaining strength and consistency on this subject, and will ere long speak a language which can neither be misunderstood nor destroyed. The rights of the poor—of the virtuous, industrious, and honest poor—will be vindicated, and the unmolested enjoyment of their domestic comforts, and of the fruits of their labour, secured to them against the insatiable demands of the idle drunkard, and profligate pauper.

Men and Manners in America, by the Author of Cyril Thornton. *Philadelphia:* Carey, Lea & Blanchard.—We are disappointed in this volume. A philosophical spirit of inquiry into our social and political condition, although it should occasionally lead to conclusions shocking to our vanity or prejudices, would yet have compensated us by the opportunity of comparing our own views with those which a foreigner, qualified to conduct such an inquiry, might present. Self-improvement would result from such a comparison. We had hoped that Mr. Hamilton's book would be such a one; but he appears to have sinned as "all his tribe" have done before, by jumping to general conclusions from individual instances, and by considering as peculiar, prominent characteristics to which, as a sojourner among a strange people his attention was naturally turned, but which, living on with the current in his own country, had escaped his observation there. This latter misapprehension is particularly illustrated by the imputation much dwelt upon in these pages, that money is the idol and chief good of Americans; and throughout the thirst for gold is spoken of as something different from any thing the author had witnessed in his own country. But surely in no country in the world is money so worshipped as in England, or so omnipotent to overcome what neither merit, nor talent, nor virtue, unaided by gold, can avail to do—the distinctions of rank and the artificial barriers of society. All there is barter; hence Bonaparte's sarcasm upon the "nation of shopkeepers;" hence the plots and chief incidents of the many novels which aim at presenting living pictures of the manners and habits of the day. On this head, we quote, not in the way of retaliation and reproach, but as confirming the position stated above, that a stranger is apt to mistake as peculiarities in a foreign country, what his own abounds in, Mr. Bulwer's late work on England and the English,—a work, by the way, which furnishes for every passage of Mr. Hamilton's book that imputes special errors or vices to Americans, abundant parallels, in English manners and society.

"The first thing (says Mr.B.) which strikes the moral inquirer into our social system, is the respect in which wealth is held." "In some countries," he adds, "pleasure is the idol, in others, glory and the prouder desires of the world; but with us, money is the greatest of duties."

Want of philosophic observation, however, is not the only fault we find with Mr. H.'s book: there is another even graver, because affecting its fairness; that is, that it was both written and published in aid and furtherance of English habits and institutions. The avowed motive for giving it to the world at the present moment, is, to counteract the evil which "drivellers," who quote with approbation in Parliament, and as worthy of imitation, the practical operation of American institutions, may bring upon England. With such predispositions, no man could do justice to a foreign nation. Mr. Hamilton, moreover, is a writer of much practice, and therefore duly sensible of the value, without always considering the truth or justness, of a brilliant alliteration, or antithesis. He has not always been above these temptations, as may be in part seen by the grouping of the figures in the extract we make respecting the President's levee. With all this, however, he has too much of character and fairness, not to admit the existence of much worth and talent and integrity—of general prosperity, and the unquestionable security of person and property, among us; and by these and other admissions effectually, though unconsciously, disproves the unfavorable conclusions to which he arrives. But we must break off—presenting to our readers today only a series of portraits drawn from this volume.

> Mr. Gallatin.—Mr. Gallatin I regarded with peculiar interest. His name was one with which I had been long familiar. Born in Switzerland, he became a citizen of the United States, soon after the Revolution, and found there a field, in which it was not probable that talents like his would remain long without high and profitable employment. I believe it was in the cabinet of Mr. Jefferson that Mr. Gallatin commenced his career as a statesman. Since then, much of his life has been passed either in high offices at home, or as minister to some of the European courts; and the circum-

stance of his foreign birth rendering him ineligible to the office of president, this veteran statesman and diplomatist, wisely judging that there should be "some space between the *cabinet* and the grave," has retired from political life, and finds exercise for his yet unbroken energies in the calmer pursuits of literature.

In his youth, Mr. Gallatin must have been handsome. His countenance is expressive of great sagacity. He is evidently an acute thinker, and his conversation soon discovered him to be a ruthless exposer of those traditionary or *geographical* sophisms, in politics and religion, by which the mind of whole nations has been frequently obscured, and from the influence of which none, perhaps are entirely exempt. Mr. Gallatin speaks our language with a slight infusion of his native accent, but few have greater command of felicitous expression, or write it with greater purity.

Mr. Harding.—I had the pleasure of becoming acquainted with Mr. Harding, a painter of much talent, and very considerable genius, His history is a singular one. During the last war with Great Britain, he was a private soldier, and fought in many of the battles on the frontier. At the return of peace, he exchanged the sword for the pallet, and without instruction of any kind, attained to such excellence, that his pictures attracted much notice, and some little encouragement. But America affords no field for the higher walks of art, and Harding, with powers of the first order, and an unbounded enthusiasm for his profession, is not likely, I fear, to be appreciated as he deserves. Some years ago, he visited England, where his talents were fast rising into celebrity, but the strength of the *amor patriæ* unfortunately determined him to return to his native land. I say unfortunately, because in England he could scarcely have failed of attaining both wider fame and more liberal remuneration, than can well be expected in America. The modesty of this artist is no less remarkable than his genius. He uniformly judges his own performances by the highest standard of criticism, and is far rather disposed to exaggerate than extenuate their defects. Such a character of mind holds out hopes of future achievement. In truth, even now, he is deficient in nothing, but a certain softness and finish, which time and a little practice will undoubtedly supply.

Joseph Bonaparte.—Joseph Bonaparte, in person, is about the middle height, but round and corpulent. In the form of his head and features there certainly exists a resemblance to Napoleon, but in the expression of the countenance there is none. I remember, at the Pergola Theatre of Florence, discovering Louis Bonaparte from his likeness to the Emperor, which is very striking, but I am by no means confident that I should have been equally successful with Joseph. There is nothing about him indicative of high intellect. His eye is dull and heavy; his manner ungraceful and deficient in that ease and dignity which we vulgar people are apt to number among the attributes of majesty. But Joseph was not bred to kingcraft, and seems to have been forced into it rather as a sort of political stop gap, than from any particular aptitude or inclination for the duties of sovereignty. I am told he converses without any appearance of reserve on the circumstances of his short and troubled reign—if reign, indeed, it can be called—in Spain. He attributes more than half of his misfortunes, to the jealousies and intrigues of the unruly marshals, over whom he could exercise no authority. He admits the full extent of his unpopularity, but claims credit fur a sincere desire to benfit the people.

One circumstance connected with his deportment I particularly remember. The apartment was warm and the ex-king evidently felt it so, for taking out his pocket handkerchief, he deliberately mopped his bald "discrowned head," with a hand which one would certainly have guessed to have had more connexion with a spit than a sceptre.

☞ President Jackson and his Levee.—We found the President had retired with a headach, but in a few minutes he appeared, though from the heaviness of his eye, evidently in a state of considerable pain. This, however, had no influence on his conversation, which was spirited, and full of vivacity. He informed us that he had been unwell for several days, and having the fatigues of a levee to encounter on the following evening, he had retired early, in order to recruit for an occasion which required the presence of all his bodily powers. When this subject was dismissed, the conversation turned on native politics, the Indian question, the powers of the Supreme Court, and a recent debate in the Senate, which had excited considerable attention.

Of the opinions expressed by this distinguished person, it would be unpardonable were I to say any thing; but I heard them with deep interest, and certainly considered them to be marked by that union of boldness and sagacity, which is generally supposed to form a prominent feature of his character. General Jackson spoke like a man so thoroughly covninced of the justice of his views, that he announced them unhesitatingly and without reserve. This openness might be increased, perhaps, by the knowledge of my companion being a decided supporter of his government; but sincerity is so legible both in his countenance and manner, that I feel convinced that nothing but the strongest motives of state policy could make him hesitate, under any circumstances, to express boldly what he felt strongly.

On the following evening I attended the levee. The apartments were already full before I arrived, and the crowd extended even into the hall. Three—I am not sure that there were not four—large saloons were thrown open on the occasion, and were literally crammed with the most singular and miscellaneous assemblage I had ever seen.

The numerical majority of the company seemed of the class of tradsmen or farmers, respectable men, fresh from the plough or the counter, who, accompanied by their wives and daughters, came forth to greet their President, and enjoy the splendors of the gala. There were also generals, and commodores, and public officers of every description, and foreign ministers and members of Congress, and ladies of all ages and degrees of beauty, from the fair and laughing girl of fifteen, to the haggard dowager of seventy. There were majors in broad cloth and corduroys, redolent of gin and tobacco, and majors' ladies in chintz or russet, with huge Paris ear-rings, and tawny necks, profusely decorated with beads of colored glass. There were tailors from the board, and judges from the bench; lawyers who opened their mouths at one bar, and the tapster who closed them at another;—in short, every trade, craft, calling, and profession, appeared to have sent its delegates to this extraordinary convention.

For myself, I had seen too much of the United States to expect any thing very different, and certainly anticipated that the mixture would contain all the ingredients I have ventured to describe. Yet, after all, I was taken by surprise. There were present at this levee, men begrimed with all the sweat and filth accumulated in their day's—perhaps their week's—labor. There were sooty artificers, evidently fresh from the forge or the workshop; and one individual I remember—either a miller or a baker—who, wherever he passed, left marks of contact on the garments of the company. The most prominent group, however, in the assemblage, was a party of Irish laborers, employed on some neighboring canal, who had evidently been apt scholars in the doctrine of liberty and equality, and were determined, on the present occasion, to assert the full privileges of "the great unwashed." I remarked these men pushing aside the more respectable portion of the company with a certain jocular audacity, which put one in mind of the humors of Donnybrook.

Mr. Edward Livingston.—Mr. Edward Livingston, the Senator for Louisiana, shortly after my departure from Washington, became Secretary of State. Bred to the New York bar, he early took his station in the very first line of his profession. As a philosophical lawyer, he stands not only unrivalled, but unapproached. His experience in public life has been very great; and his high talents, extensive knowledge, and amiable character, have deservedly acquired for him the admiration and esteem of a people not prompt in the payment of such tribute.

Mr. Livingston's fame, however, is not American, but European. The criminal code which he has framed for Louisiana, is confessedly a magnificent specimen of philosophical legislation, and places the reputation of its author on a secure and permanent foundation. From this code the punishment of death is excluded, and Mr. Livingston is a warm advocate for its removal from the statute books of other States.

The labors of Mr. Livingston in the compilation of his code were, for many years, unwearied and assiduous. Men of more limited knowledge, and inferior powers, would have been unfit for such a task. Men of less enthusiasm would have shrunk from it in dismay. Mr. Livingston, fortunately for himself and his country, braved all difficulties, devoted to it the whole energies of his mind, and brought it to a happy completion.

Animated by the zeal of a philanthropist, he made himself acquainted with the laws of all nations, and the contents of every treatise on crime and punishment which could be discovered in Europe. He mained an extensive correspondence with the most eminent political philosophers of the age, and among others, with Bentham, by whose enlightened advice he professes to have largely profited.

One incident in the life of Mr. Livingston is worthy of record, as affording a fine illustration of the character of the man. His labors connected with the code were already far advanced, when his whole papers were destroyed by fire. This happened at ten o'clock at night, and at seven on the following morning, with unbroken spirit, he began his task afresh! Few men are endowed with such buoyancy of spirit, and indomitable perseverance.

In person, Mr. Livingston is rather above the middle height. His countenance, though without elegance of feature, is peculiarly pleasing, from the benevolence of its expression, unusual at his years, which lights up his eye when he discourses on any interesting subject. His manners are those of a finished gentleman, yet rather, I should imagine, the spontaneous result of an innate and natural delicacy of thought and feeling, than of intercourse with polished society. To the courtesy and kindness of this eminent individual I feel deeply indebted. It is with pleasure that I now give public expression to those sentiments of admiration and respect which I shall ever entertain for his character and talents.

Daniel Webster.—The person however, who has succeeded in rivetting most strongly the attention of the whole Union, is undoubtedly Mr. Webster. From the Gulf of St. Lawrence to that of Mexico, from Cape Sable to Lake Superior, his name has become, as it were, a household word. Many disapprove his politics, but none deny his great talents, his unrivalled fertility of argument, or his power, even still more remarkable, of rapid and comprehensive induction. In short, it is universally believed by his countrymen, that Mr. Webster is a great man; and in this matter I certainly make no pretension to singularity of creed. Mr. Webster *is* a man of whom any country might well be proud. His knowledge is at once extensive and minute, his intellectual resources very great; and, whatever may be the subject of discussion, he is sure to shed on it the light of an active, acute, and powerful mind.

I confess, however, I did meet Mr. Webster under the influence of some prejudice. From the very day of my arrival in the United States, I had been involuntarily familiar with his pretensions. Gentlemen sent me his speeches to read. When I talked of visiting Boston, the observation uniformly followed, Ah! there you will see Mr. Webster." When I reached Boston, I encountered condolence on all hands. "You are very unfortunate,"' said my friends, "Mr. Webster set out yesterday for Washington." Whenever at Philadelphia and Baltimore, it became known that I had visited Boston, the question, "Did you see Mr. Webster?" was a sequence as constant and unvarying as that of the seasons.

The result of all this was, that the name of Webster became invested in my ear with an adventitious cacophony. It is not pleasant to admire upon compulsion, and the very pre-emience of this gentleman had been converted into something of a bore. To Washington, however I came, armed with letters to the unconscious source of my annoyance. The first night of my arrival I met him at a ball. A dozen people pointed him out to my observation, and the first glance rivetted my attention. I had never seen any countenance more expressive of intellectual power.

The forehead of Mr. Webster is high, broad, and advancing. The cavity beneath the eyebrow is remarkably large. The eye is deeply set, but full, dark and penetrating in the highest degree; the nose prominent, and well defined; the mouth marked by that rigid compression of the lips by which the New Englanders are distinguished. When Mr. Webster's countenance is in repose, its expression struck me as cold and forbidding, but in conversation it lightens up; and when he smiles, the whole impression it communicates is at once changed. His voice is clear, sharp, and firm, without much variety of modulation; but when animated, it rings on the ear like a clarion.

As an orator, I should imagine Mr. Webster's forte to be in the department of pure reason. I cannot conceive his even attempting an appeal to the feelings. It could not be successful; and he has too much knowledge of his own powers to encounter failure. In debate his very countenance must tell. Few men would hazard a voluntary sophism under the glance of that eye, so cold, so keen, so penetrating, so expressive of intellectual power. A single look would be enough to wither up a whole volume of bad logic.

In the Senate, I had, unfortunately, no opportunity of hearing Mr. Webster display his great powers as a debater. During my stay the subjects on which he happened to speak were altogether of inferior interest. In the Supreme Court he delivered several legal arguments which certainly struck me as admirable, both in regard to matter and manner. The latter was neither vehement nor subdued. It was the manner of conscious power, tranquil and self-possessed.

Mr. Webster may be at once acquitted of all participation in the besetting sins of his age and country. I even doubt, whether, in any single instance, he can be fairly charged with uttering a sentence of mere declamation, His speeches have nothing about them of gauddiness and glitter. Words with him are instruments, not ends; the vehicles, not of sound merely, but of sense and reason. He utters no periods full of noise and fury, like the voice of an idiot, signifying—nothing; and it certainly exhibits proof that the taste of the Americans is nor yet irretrievably depraved, when an orator like Mr. Webster, who despises all the stale and petty trickery of his art, is called by acclammation to the first place.

In conversation, Mr. Webster is particularly agreeable. It seems to delight him, when he mingles with his friends, to cast off the trammels of weighty cogitation, and merge the lawyer and the statesman in the companion;—a more pleasant and instructive one I have rarely known in any country. As a politician, the opinions of Mr. Webster are remarkably free from intolerance. He is one of the few men in America who understand the British Constitution, not as a mere abstract system of laws and institutions, but in its true form and pressure, as it works and acts on the people, modified by a thousand influences, of which his countrymen in general know nothing.

Mr. Van Buren.—Mr. Van Buren, then Secretary of State, and now Vice-President, possesses, perhaps, more of the manner which in England would be called that of the world, than any other of the distinguished individuals whom I met in Washington. He is, evidently, a clever man, with a perfect knowledge of character, and the springs of human action. Neither his conversation nor his manner are marked by anything of official reserve. Indeed, where the whole business of the government is conducted by committees of the Senate and Representatives, an American Secretary of State can have few secrets, and those not of much value. The opponents of the ministry, however, accuse Mr. Van Buren of being a manœuverer in politics—a charge, I presume, to which he is obnoxious only in common with his brother statesmen, of whatever party; for, where independence is impossible, finesse is necessary. But, on the details of party politics I say nothing; I only know that the Secretary of State is a gentleman of talent and information, of agreeable manners, and, in conversation, full of anecdote and vivacity.

Tales and Novels of Maria Edgeworth, vol. VII; uniform edition. New York, J. & J. Harper. This volume contains *Leonora* and various letters, and *Patronage*. It is, too, equally well got up, mechanically, as the preceding volumes of this excellent series.

A Complete System of Mensuration of Superficies, and Solids of all Regular Figures, by Tobias Ostrander, Teacher of Mathematics. New York, McElrath, Bangs & Co.—This treatise designed for schools and private learners, is intended to supply the want, which is said to exist, of a plain and practical exposition of the principles upon which the daily operations of mensuration are mechanically, as it were, conducted. Previous treatises, it is said, have assumed too much knowledge on the part of learners. This leads them on, step by step, from the A, B, C, to the mystery of the whole subject. The work is plainly and accurately published—and must be useful.

My Imprisonment.—*Memoirs of* Silvio Pellico, *translated from the Italian by* Thomas Roscoe. New-York, J. & J. Harper.

This is a book which in Europe should, like the drum covered with the skin of *John Zisca*, be used to arouse every heart against oppressions such as it details, and against the political institutions under which they could be perpetrated with impunity.—Here it will be eagerly perused, as the interesting record of undeserved sufferings endured with high-minded constancy, and cheered by unfailing reliance upon the promises of the gospel. It is a beautiful instance of the power of the mind when rightly directed and finely touched, to elevate the physical frame above even such torments as this son of genius was subjected to. Pellico's crime was a desire to improve, elevate and nationalize the feelings of his countrymen, to render Italians worthy of their descent—and with this view he became the editor of a newspaper. His journal was soon suppressed by the Austrian Censorship, and he himself cast into prison, and that prison was "the leads" of the Ducal palace at Venice. Our readers shall see what sort of imprisonment that was:

My solitude, meantime, grew more oppressive.—Two sons of the jailer, whom I had been in the habit of seeing at brief intervals, were sent to school, and I saw them no more. The mother and the sister, who had been accustomed, along with them, to speak to me, never came near me, except to bring my coffee. About the mother I cared very little; but the daughter, though rather plain, had something so pleasing and gentle, both in her words and looks, that I greatly felt the loss of them. Whenever she brought the coffee, and said, "It was I who made it; I always thought it excellent; but when she observed, "This is my mother's making," it lost all its relish.

Being almost deprived of human society, I one day made acquaintance with some ants upon my window; I fed them; they went away, and ere long the place was thronged with these little insects, as if come by invitation. A spider, too, had weaved a noble edifice upon my walls, and I often gave him a feast of gnats or flies, which were extremely annoying to me, and which he liked much better than I did. I got quite accustomed to the sight of him; he would run over my bed, and come and take precious morsels out of my hand. Would to heaven these had been the only insects which visited my abode. It was still summer, and the gnats had begun to multiply to a prodigious and alarming extent. The previous winter had been remarkably mild, and after the prevalence of the March winds, followed extreme heat. It is impossible to convey an idea of the insufferable oppression of the air in the place I occupied. Opposed directly to a noontide sun, under a leaden roof, and with a window looking on the roof of St. Mark, casting a tremendous reflection of the heat, I was nearly suffocated. I had never conceived an idea of a punishment so intolerable; add to which the clouds of gnats, which spite of my utmost efforts, covered every article of furniture in the room, till even the walls and ceiling seemed alive with them; and I had some apprehension of being devoured alive. Their bites, moreover, were extremely painful, and when thus punctured from morning till night, only to undergo the same operation from day to day, and engaged the whole time in killing and slaying, some idea may be formed of the state beth of my body and my mind.

I felt the full force of such a scourge, yet was unable to obtain a change of dungeon, till at length I was tempted to rid myself of my life, and had strong fears of running distracted. But, thanks be to God, these thoughts were not of long duration, and religion continued to sustain me. It taught me that man was born to suffer, and to suffer with courage; it taught me to experience a sort of pleasure in my troubles, to resist and to vanquish in the battle appointed me by Heaven. The more unhappy, I said to myself, my life may become, the less will I yield to my fate, even though I should be condemned in the morning of my life to the scaffold. Perhaps, without these preliminary and chastening trials, I might have met death in an unworthy manner.

FOREIGN INTELLIGENCE.

From Europe.—The arrival of the Tamerlane from Havre, and the Splendid from Liverpool, has put us in possession of Paris and London dates to the 13th and 14th of August, inclusive.

The details of the attack made on the 25th July, by the Miguelite troops, on Oporto, have been at last received in London. The loss sustained by the besieging army is represented as truly terrible, and the strongest feelings of dissatisfaction were created against Marshal Bourmont for having insisted upon the attack. The Marshal himself, who was severely wounded, it is reported has retired to Spain. As the government of that country shows no disposition to move in favor of Miguel, the unhappy contest which has lately distracted Portugal may be considered as finally concluded,—and, indeed, may by this time be laid forever at rest, by the withdrawal of the vanquished party from his brother's dominions.

Nothing is yet known respecting the fate of Don Miguel and his army, but it is generally believed that the Government of Ferdinand has determined on not receiving that Prince in Spain. Portuguese Stock is quoted at 90 1-4, and the Regency Scrip at 25 1-4 premium. Don Pedro is said to have granted a general amnesty, excepting only the Minister of Police. It is thought that one of his first acts will be the suppression of the convents throughout Portugal. This certainly sounds as if the Regent thought himself already secure in his new situation. The Portuguese Consul at Bayonne is mentioned among those out of the kingdom who have recently declared for the new Government. The Miguelite General Viscount de Molellos, who had repaired to Beja, took refuge, it is said, in Badajoz, after being deserted by his troops. It is said that M. de Bourmont, after resigning his command, had embarked for Cadiz, whence he was sent to perform quarantine at Mahon. A report however prevailed in Paris, that the French Government think they have discovered a project for landing in Vendee with the remains of the French Etat Major in the service of Don Miguel. Other rumors give a little importance to this extravagant project, if such be indeed entertained. The Echo du Peuple, of Poitiers, states that "from the constant movements and secret councils between the Nobles and the Priests, and the display of the white flag at several towns in the country, no doubts can be entertained that the legitimatists were preparing for a last effort. They have for a long time boasted that an effort would be made as soon as Henry V. attained his majority." We imagine that half the reports of this kind owe their birth to idle newspaper speculation. The public mind has been so stimulated by striking political movements in Europe, that the press can there keep its unnatural appetite in play only by supplying continual food of the same character; just as our western brethren, when suicides are slack, androbberies and murders run low, are sure to gratify the public's amiable predilection for horrors by some dreadful cock and bull story, that shall make the hair of the whole nation stand on end. The French King was to leave Paris on the 26th, accompanied by Marshal Soult, and Admiral de Rigny, and arrive at Cherbourg on the 31st. The Cabinets of France and Spain are both engaged in arrangements preparatory to recognizing the independence of their late colonies in this hemisphere. A letter writer from Madrid under date of August 1st, says—"We are assured that negotiations are on foot respecting the recognition of several of the late Spanish colonies in America. Our cabinet still puts forward, as the *sine qua non*, the proportionate division of the debt, which is to be settled on conditions similar to those now in contemplation between Holland and Belgium." And Paris dates of August 11, state that the government has received new proposals from that of Hayti, but they have not been acceded to. The government requires that positive guarantees should be given before any further negociations are entered upon, in order that the execution of what may be agreed upon, may be confided in. The brig Le Cuirassier was about to sail from Brest, with despatches for Port au Prince, from the Minister of Foreign Affairs, on the subject of this negotiation, and she is to wait for the answer of the Haytien government. Some advices of moment from Switzerland, with accounts of some interest from Poland, will be found below. The Paris Constitutional, in speaking of the former country, pretends that the Germanic Diet has already given orders to interfere in the affairs of Switzerland. But other journals say that none of the letters which have arrived from that part of Germany make any mention of the matter; and besides, it would have been rather difficult for the High Diet to have already taken such measures, as a great number of the representatives were absent from Frankfort. The Frankfort Journal, in an article on the affairs of Portugal, expresses much fear lest an alliance of what it calls the liberal powers—meaning England, France and Portugal, under its new regime—shall disturb "that general peace won by Europe after so many efforts and sacrifices." The apprehension, though it might readily find a place in an Austrian or Russian brain, becomes ridiculous when a part of the scheme conjured up by the Frankfort editor, to frighten his legitimate readers, embraces a movement in unison with the liberals on the part of Spain; which country, he thinks, may by some hocus pocus process be brought under their influence. "This explains," he goes on to say, "why the Northern Powers, so interested in the equilibrium of Europe, cannot, without imprudence, confine their vigilance to the Rhine and Italy. They must also extend their influence to Spain, and have a deliberative voice at Lisbon and Oporto." *Quem Deus vult, &c.* If these disinterested regulators of human affairs thrust their fingers into the constitutional arrangements of the Peninsula at the present crisis, they may communicate an electric shock to the inflammable materials at home, which may lead them to regret, when too late, that they did not "confine their vigilance to the Rhine and Italy." The grand struggle that Mr. Canning foretold, every one knows must come sooner or later; but it is astonishing how blindly they who have everything to lose, would hurry it. Shut up in its own atmosphere, legitimacy may live many a day yet; but for its supporters to go beyond their acknowledged sphere to check the growth of liberalism elsewhere, is like pushing a cordon sanitaire inte an infected district beyond the frontier, and thus supplying a conductor for contagion over the border.

Parliament was to be prorogued on the first of September. For a great many years past there has not been so abundant a harvest as at present.

In the House of Commons, on the 7th August, Mr. Lyall presented a petition from merchants and brokers of London, for the continuance of the usual facilities to transmit letters to the United States of America, otherwise than by Post Office Packets, when opportunities offered. Sir James Graham replied that there was every disposition to comply with these wishes of the merchants, if a practicable mode could be suggested that would secure the revenue against fraud and injury.

The place of Don Miguel's retreat is not yet ascertained. It is said that, on receiving the intelligence of the overthrow of his forces, he set out to join Don Carlos, with the view of accompanying him into Italy. Donna Maria was about to depart from Paris on her way to Portugal.

Disturbances in Switzerland.—Schwytz, July 31.—A civil war has just made its appearance in this part of the country. An inhabitant of Kussnacht* (Schwytz) exterior) having petitioned for a reunion with the Schwytz Interior, was arrested yesterday by the authorities, but afterwards rescued by his friends. Serious disturbances ensued; the windows of several houses were broken, muskets were fired, and several persons were wounded. The party who were for a reunion suffered much. Troops were immediately sent to the frontier to prevent a civil war. Col. Aleyberg, an officer of the Federal Government, but now attached to the small diet, entered Kussnacht at the head of 600 men, and took possession of it, in the name of the Canton of Schwytz. He deposed the authorities, appointed new magistrates, made the principal patriots prisoners, and brought them under escort to Schwytz. We have here 3000 men under arms ready to support him; and the smaller Cantons are all brave and zealous, and are also ready to lend their aid. On the arrival of the troops on the frontier this morning, several musket shots were heard in the distance, and soon afterwards a messenger brought intelligence that hostilities had commenced, and a public functionary transmitted to the commandant a letter demanding a supply of forces.

[* Kussnacht is on the borders of the Lake of the four Cantons, three leagues from Lucerne, and with its district contains 4000 souls. It was at this place that Wm. Tell slew the tyrant Gessler. This small state was subject to Schwytz before the revolution of 1793.]

Latest from Mexico.—The New Orleans Bulletin of the 31st ult. has the following—

By the schooner Tampico, Daunas, from Tampico, we have copious files from the *Gazeta*, to the 10th August, and a supplement from the *Telegrafo* of Mexico (city,) the latter containing a despatch from Gen. Valencia, to the Minister of War; the insurgent general, D. Angel Perez Palacies, with all his host, prisoners, arms, and every thing falling into the hands of Valencia. The battle lasted but five hours; the patriot troops behaving in the most heroic manner.

On which the Telegraph observes, "the liberty of the Mexicans is about to be secured forever."

In the State of New Leon, Col. Don Ramon Cor. i na, commanding the Federal Troops had completety triumphed over the rebels, who had renounced their faction, and placed themselves at the disposal of the Mexican government. (Last despatch dated Moontery, July 19th.

The prisoners taken at Cuernavaca are 300, besides Esalada and Palacies. (Tampico Gaz. Aug. 9.)

The same paper, and date, says—A courier has just arrived from Mexico, and it being too late to make extracts, we shall only say that Gen. Valencia's victory is confirmed, and on the 29th of July, Aristo and Duran were in Griega moving towards Zelaya.

Mexico, July 28.

We announce with grief that at the departure of the express which brought the preceding (Valencia's despatch) Gen. D. Vicente Filasala was in the agonies of death.—[Democrata.]

Owing to the late hour at which we received those interesting papers, &c. we are compelled to break off here—though with much reluctance.—[N. O. Bulletin, Aug. 31.]

SUMMARY.

Our distinguished fellow citizen, *Christopher Hughes*, arrived Sunday from England, on a temporary leave of absence, as we learn, from his post, as *Chargé d'Affaires* at Stockholm. He will, as always, find a warm welcome among his numerous friends at home.

Appointments by the President.—Charles I. Hambro, Consul of the United States at Copenhagen, in the place of John Raynals, deceased.

George K. Walker, Attorney of the United States for the Middle District of Florida, in the place of John K. Campbell, deceased.

Dr. Aylett Hayes, of Virginia, has bequeathed freedom to about one hundred slaves, and twenty dollars for each, to assist the Colonization Society in conveying them to Liberia.

Omnibusses &c.—There are now seventy-six Omnibusses in this city, eighteen of which run through Broadway and Canal street to Greenwich; fifteen to the Dry Dock; fourteen up Broadway to the corner of Bleecker st; eleven to the upper end of Bleeker st; seven through the Bowery to the corner of Twenty first street and eighth avenue; five to the upper Bull's Head; two to Greenwich via Courtlandt and Greenwich streets; and one, (the Red Rover) through Chatam street and the Bowery, thence across the city to Military Hall, and then to 273 Bleecker st.

Besides these there are one hundred and ninety-fonr licensed hackney coaches at the different stands; two thousand four hundred and forty nine carts; and one hundred and fifty seven porters, with either barrows or hand carts.—[Standard.]

Snow.—We learn by the Litchfield, Connecticut, Enquirer, that Mount Riga, in Salisbury, was whitened with snow on Thursday the 5th inst. It is also said that snow was observed in Winchester and Goshen, and of course we should think, in Norfolk, for it is a common remark that the good people of Norfolk never pretended to make any account of snow, until it is at least two years old.—[Albany Daily Advertiser.]

Norfolk, Friday, September 13.—The steamboat Watchman, commanded by Lieut. Thos. R. Gedney, of the Navy, left here on Saturday last for Mobile, but in consequence of a strong head wind, was detained at Old Point Comfort until Tuesday afternoon, when she proceeded to sea, and, we regret to add, was the same night, a little to the southward of the Capes, run foul of by the brig Nahant, Parker, from Boston, bound to this port, and so much injured as to render it necessary for her to put back. She will be repaired and ready for sea in about eight or ten days.

We learn that the Watchman is intended to ply between Mobile and New Orleans, to carry the mail between those cities; was built at Washington, with excellent accommodations for passengers, and has an engine of 50 horse power, constructed by those celebrated machinists, Messrs. Watchman & Bratt, of Baltimore. Lieut. Gedney who is at present in command of her, is ordered on a survey of a part of our Southern coast.—[Herald.]

[*From the Buffalo Journal of Sept.* 4.]

A floating palace came into our harbor yesterday, bearing the imposing title of 'George Washington, built at Huron, Ohio, under the direction of her commander, Capt. A. Walker, and owned by the Hudson Steamboat Company. She is 186 feet in length, with breadth of hull 30 feet, guards not included—hold 12 feet, and of 606 tonnage—decks flush, and promenade deck splendidly arranged. She has on deck six state rooms of two and three berths each, admirably arranged for families, through the avenues to an elegantly constructed staircase and descends to the ladies' cabin, composed of 28 births, supporting the deck by finely turned columns, and furnished in a style more rich and with better taste than any boat we ever saw on the Hudson. Thence to the grand cabin, or rather grand saloon, done off in the same manner, and from which you communicate with the deck, larboard or starboard, by winding stair cases,—her height to the first deck being 10 feet, and from the first to the second the same.

She has two two pressure horizontal engines of 100 horse power each, built by Warden & Benny, Pittsburg, and is ship rigged, with tops and standing top gallant yards. Furnished by Staats of this city, and fitted out by Murray & Co. Cost $75,000. In her steerage, or forward cabin, are 40 berths well furnished, a bar, a steward and table, and three different prices of passage are named—cabin, steerage and deck. Whole number of berths 166.

Steam-Boat between Newbern and Elizabeth City.—The elegant new Steam Packet *John Stoney*, which arrived at Elizabeth City on Monday afternoon last, has been placed on the route between *Newbern and Elizabeth City*, and will hereafter run regularly, leaving Elizabeth City every *Tuesday* and *Friday* afternoon, immediately after the arrival of the Northern Mail. We understand that this boat will perform the run between the towns in from 18 to 20 hours, and probably less. She now anticipates the mail line near a day. Arrangements are in progress to have the Southern end of the Atlantic route so arranged, as to be entirely worthy of confidence. The price of the passage in the *John Stoney* from Elizabeth City to Newbern is $10, including fare. She will leave Newbern *twice a week* on her return to Elizabeth City, on such days and at such hours as will best suit the arrival of the Southern and Western Mail there.—[Norfolk Herald.]

Boundary Line between New York and New Jersey.—It is with pleasure we learn from the Newark Daily Advertiser, that the commissioners on the part of the States of New Jersey and New York on Monday last, concluded their negotiation, by a satisfactory settlement of the territorial limits and jurisdiction between the two States, on just and equitable principles, securing to each State the enjoyment of all substantial rights.

It is understood distinctly that the claim so important and indeed indispensable to this city, of jurisdiction to high water mark on the Jersey shore, is conceded—reserving to New Jersey the right of soil and property.

We understand that Mr. John S. Miercken, our late Consul for Martinique, left that Island in September last, on board the schooner Lafayette, bound for Philadelphia, via, Turks Island; that she called at the latter place, and received on board a cargo of salt and sailed again, since which, nothing has been heard of her; and that the place of the Consul is in consequence vacant. Mr. Miercken was a native of of this city—a son of the well known Peter Miercken of Southwark. He was a young man of most estimable character, and of the finest talents. His loss, for we fear there is no hope for his friends, will be lamented by all knew him.

Pedestrianism.—The Boston Evening Gazette mentions that Col. Haskett, of SouthCarolina, finished his undertaking of walking two thousand miles in seventy days, on bread and water, on Friday last.—"He has, as will appear by his certified report, exceeded the distance nearly four hundred miles, and gained in weight 2 1-2 lbs. He has visited nearly all the towns in the New England States, and will return home on his abstemious diet, travelling on foot. On his return he will proceed south to Philadelphia, at which place, to comply with the wishes of some professional gentlemen, he will undertake to walk forty miles a day for six days on a prescribed amount of food. After this, it is said he will prepare for publication his notes on diet, and publish them to be distributed gratis in the places he has visited. His object, as he states, has been not to exhibit himself as possessing more physical power than others—but he says, he believes that any man can perform the same. The time and distance was selected to prove this. First—the distance per day is answerable to ten hours labor, and this time (the heat of summer) to show the effect of the the diet in predisposing the body to stand the effect of heat.

[*From the Troy Press.*]

A Steamboat on a New Plan.—Mr. Burden, of this city, already favorably known to the public as a most ingenious mechanic, and the author of an important invention, whereby he has secured a fortune to himself, and conferred a great benefit upon the country—we mean his patent *wrought* spike machine,—has undertaken no less a task than that of effecting an entire overturn in the construction of steamboats and steam navigation. He is now constructing a steamboat, on a plan peculiarly his own, to run 25 miles the hour, and to make a trip from Albany to New York and back by daylight.

It is not, however, in respect to *speed* only, which is to constitute the chief excellence of Mr. Burden's boat, but in regard to materials, weight, cheapness of construction, and the power necessary to propel it, it is designed to effect a saving of 50 per cent. over the most approved models new in use.

The plan is this: Mr. Burden has constructed two trunks, which, for the want of a better similitude, we shall compare to two huge sea-serpents. They are each 300 feet long, and only 8 feet diameter in the centre, tapering off each way to a point. They are constructed of staves, like a barrel, except instead of hoops on the outside, they are drawn together from the inside by iron rods having a head at one end and screws cut at the other. These at regular intervals pass from the outside of the trunk through each stave, and through a stout iron in the centre, and are there drawn up and secured fast by a nut. The staves are of pine timber 4 inches thick, and from 30 to 80 feet in length. These two trunks are to be placed side by side, 16 feet apart at the centre, and suitably and efficiently connected together by transverse timbers, upon which the deck is to be laid and the machinery placed. It is designed to propel the boat with one wheel only, which is to be placed *between* the trunks at the centre. The buckets will be 16 feet long, and the diameter of the wheel considerably greater than in common boats. The engine will be horizontal, like that of the Novelty; and is designed ordinarily to exert a 75 horse power, but is so constructed that greater may be had if necessary. Mr. B. however, does not calculate that more will be required.

The trunks were constructed at Meritt's Mills, below the city, and were launched, or rather *rolled*, into the Hudson yesterday. We had the pleasure of seeing one of them deposited in the watery element. The other was launched before we arrived. It is designed immediately to frame them together, and lay the deck. This done, the machinery will be applied, and the invention tested by actual experiment. It is proper, however, to say, that an experiment has already been made, with a boat of smaller dimensions, and trunks *eighty* feet long; the success of which, in the opinion of Mr. B. justifies the present undertaking, and is the basis of his entire confidence in its success.

Mr. Audubon.—This distinguished naturalist, (it is stated in the Boston Daily Advertiser,) returned from his Northeastern excursion to Boston on Wednesday, 4th ultimo. We believe that there is no one who will not be gratified to learn the progress of his arduous and unremitted labors in a branch of science which he has made peculiarly his own; and he has kindly favored us with information on the subject of his recent tour, which we are glad to lay before our readers: regretting only that we are not able to present it in his own rich and animated language, and to invest it with the attractions which it would derive from his own descriptive power.

Mr. Audubon, in company with a few friends, left Eastport on the 6th of June, in a vessel hired for his purpose. His course was first directed to the straits of Canso, and thence to the Madalene Island, a poor and barren spot, inhabited by a few persons, who are principally French Canadians. From these islands, he sailed towards the Gannet rock, which derives its appellation from the birds of the same name, that resort to it in multitudes large enough to wring the heart of Mr. Malthus. The rock is four hundred feet in height, and several acres in extent.—When it was visited by Mr. Audubon, it was covered with innumerable birds upon their nests, which gave it the appearance of a huge mass of snow, while the countless numbers of those hovering above it presented a perfect image of a snow storm. The report of muskets did not appear in the slightest degree to alarm them. A severe gale prevented the party from attempting to explore this extraordinary colony, and the rock is in fact regarded by the fishermen as inaccessible. The same gale carried them rapidly by the southern extremity of Anticosti, in the mouth of the St. Lawrence, to the coast of Labrador, which they reached in the 51st degree of latitude. The shore of this iron country is extremely bold, and presented a most desolate appearance—the land was covered with heavy fogs, and diversified, even at the summer season, with numerous deep drifts of snow. Mr. Audubon spent a fortnight in the harbor called Little Nitasguan, employing his time in making excursions in the country, and along the coast, to the distance of 40 miles. The whole appears to be a solid rock, covered with mosses of uncommon depth and beauty; the vegetation in the valleys, which lie open to the sun, is remarkable for its luxuriance, and variegated with beds of rich plants, which were entirely new to every member of the party; the only forests are composed of thin and scattered dwarf trees, principally firs. Here Mr. Audubon was enabled to ascertain the habits of many of the birds which resort to our coast during the winter, and discovered two new species, a *Fringilla* and a *Parus*. In the harbor of Nitasguan, he met with a British surveying schooner, the Gulnare, under the command of Capt. Bayfield, from whom, together with his officers, Lieut. Bowen and Dr. Kelly, the party experienced a very friendly and kind reception.

On leaving this place, Mr. Audubon proceeded eastwardly to the fine harbor of Wapatiguan, where he was a few days afterwards followed by the Gulnare. Here he procured specimens of the willow grouse, old and young, ascertained the habits of many land and water birds, examined the country and neighboring islands, gathered a few new plants and shells, and departed for the port of Little Macatine. The shores of this coast were more bold and rugged than he had yet visited; the aspect of the country became more sterile, and a corresponding change was observable in the climate. The excursions of the party in this quarter were numerous and fatiguing, and it was with difficulty that any of their number could walk for a greater distance than ten miles a day. On ascending the highest hills, the prospect in every direction was of an uniform and very cheerless character: the same thick mosses were spread over the table land, the plants were nearly the same, and lakes, formed by the melting of the snows of winter, were every where spread out around them. In this solitary spot, a Scotch settler had fixed his abode for more than twenty years, and seemed quite contented with the beauties of the scene. His sole occupation was that of taking seal and salmon, which were tolerably abundant in their respective seasons, and which he exchanged for requisite supplies with vessels from Quebec and Newfoundland. He had a wife and six children, by whom the travellers were received with hospitality and kindness. All of them appeared contented with their situation, and had contracted a strong attachment to their wild and dreary residence. Mr. Audubon here found the wild goose in its breeding season, and was favored with an opportunity of observing the habits of several rare species of water birds.

Brador was the next stage in the progress of the travellers; on their way to this port they explored several of the intermediate islands, where many species of birds were found breeding in abundance. These islands are resorted to by people from Nova Scotia, for the purpose of procuring eggs; they commence their operations by trampling on all which they find on the islands, and on the following day begin to collect those which are newly laid; and so successful are they in their search, that Mr. Audubon fell in with a party of three persons, who, in the course of six weeks, had found thirty-two thousand dozen, of the estimated value of four hundred pounds. There is no limit to the havoc made by these people: not content with carrying away the eggs merely, they kill the birds by thousands, in order to pluck a few feathers from the breast, and then throw them into the sea, or leave them on the rocks; and if this wanton destruction should be pursued a few years longer, it is obvious they must exhaust the sources of their profit, by driving the birds from their accustomed haunts. In the port of Brador, where they found excellent anchorage, the party met with sixty or seventy fishing vessels, the crews of all of which were actively employed. The fish were very abundant, and all expected to obtain what they denominate a fare. Mr. Audubon was, however, convinced, that a due regard to the season, and the proper application of their labor, might render the fishery far more productive than it is; and we hope hereafter to have it in our power to offer the result of his inquiries upon this subject to our readers.

The cold at this place was much more severe than was to have been expected in July. The party found it necessary to make larger fires than on the other portions of the coast; and even then the cold was so intense, that Mr. Audubon's pencil occasionally dropped from his fingers, while engaged in drawing by the fireside. Icebergs were here for the first time seen. In fact, as the party advanced along the coast, they found that a distance of only a hundred miles produced a very remarkable difference in the progress of vegetation. Here also they encountered a brother-in-law of the anchorite of Little Macatine, occupying an equally independent situation, his nearest neighbors residing at a very serious distance. This personage had maintained his post for more than 30 years, and was decidedly of the opinion that the country was the finest he had ever seen. He cultivated a small garden, in which were growing a few indifferent vegetables, and was the owner of the only horse which was seen by the travellers in the country; but for the purpose of visiting those whom he called his neighbors, he was accustomed to employ Esquimaux dogs, of which about forty were attached to his establishment. These are fed upon the seals which he catches in the spring, and which are piled in a huge mass in the vicinity of his front door, where they remain until his neighbors have reason to rejoice at their remoteness from his villa. At this place Mr. Audubon had the fortune to procure the male and female of a very large and beautiful new species of Falco, with several smaller birds. Some of the party visited a settlement, thirty miles distant, while the rest traversed this wild region in different directions, whenever the weather permitted.

On their departure from Brador, they crossed the Straits of Belle Isle, and sailed along the coast of Newfoundland, until they reached St. George's Bay, which they describe as the finest that they ever saw. The coast of Newfoundland was more elevated and broken, and even more sterile, than that of Labrador. At St. George's Bay they found a village, consisting of forty houses and two hundred inhabitants, all of whom were fishermen. These people enjoy none of the luxuries, and few of the comforts of life; in the winter season, the want of fuel, and the apprehension of exposure to the violent gales, compel them to invert the order of fashionable usage and to retire to small camps or cabins, erected in the interior. When the party left this anchorage, they were driven by a severe storm to some distance N. of the Madalene Islands, and for two days and nights were tossed in the sea of the Gulph, which Mr. Audubon emphatically describes as the vilest of seas.

As soon as the weather permitted, he sailed in the direction of Pictou, in Nova Scotia, where he discharged his vessel, in order to visit a portion of the British provinces. Pictou is a pleasant village on the margin of a beautiful bay, in which twenty or thirty vessels were at anchor, waiting for supplies of coal. The country in its vicinity is more fertile than is usual with those which abound in minerals. At Pictou, Mr. Audubon received many attentions from the Consul, Mr. Blanchard, and Professor Macculloch of the University, who has a rich collection of well preserved birds, and presented him with several valuable specimens. The road from this place to Truro is Macadamized, and resembled the finest roads of that description in Europe; and the country is rich and diversified, both in its aspect and natural productions. Truro is situated in the centre of a luxuriant valley, adorned with neat farm houses and villas; it was there that the party caught a first view of the head waters of the Bay of Fundy. Professor Macculloch was there, having gone thither for the purpose of introducing them to some gentlemen of the provincial assembly, in whose company they passed several agreeable hours. From this place to Halifax, the appearance of the country becomes less and less attractive.

The appearance of Halifax is pleasing at a distance, but a residence of a few days did not incline the travellers to feel much regret at the period of their departure; they were so unfortunate as not to see any of the gentlemen to whom the letters of introduction, which they received at Truro, were addressed. From this place to Windsor, which is situated on the river of the same name, eight or ten miles above its confluence with the Bay of Fundy, the aspect of the country is not very inviting; though on the road which winds along the bay, immediately after leaving Halifax, there are many fine seats, with ornamented grounds around them. At Windsor, the tide was observed to rise more than sixty feet, and when at half flow, it rose three feet perpendicularly in the space of ten minutes. At low water, the bed of the river is almost dry; the vessels, which were scattered along the bank to be laden with gypsum, the great commodity of the place, appeared to have been stationed there by some magic power. Mr. Audubon embarked at Windsor on board the steamboat Maid of the Mist, a most appropriate name for the latitude in which she plies, and after touching at St. Johns, returned at length to Eastport, and from thence to Boston, where he arrived in good health, and without having met with any disastrous accident in the whole course of his tour.

In this excursion it was not the expectation of Mr. Audubon to make many new discoveries; the coast of Labrador is not one which judicious birds would be likely to select for any other than a summer residence. He has, however, in ascertaining the habits of those already known, procured information which must materially enhance the value of his great work; and the drawings executed during his absence, particularly of the three birds which have been mentioned as discovered by him, are exquisitely beautiful.

Curious Organs of Fishes.—The habits of some fishes require that they should cling firmly to the rocks or to whatever presents to them. Their locomotive powers are perfect; but how are they to become stationary in the tide or the stream? I have often thought it wonderful that the salmon or the trout, for example, should keep its place, night and day, in the rapid current. In the sea, there are fishes especially provided with means for clinging to the rocks. The lump fish, *cyclopterus lumpus*, fastens itself by an apparatus which is on the lower part of its body.—The sucking fish, *remora*, has a similar provision on its back. It attaches itself to the surface of the shark and to whatever is afloat; and, of course, to the bottom of ships. The ancients believed it capable of stopping a ship under sail, and Pliny, therefore, called it *remora*. We must admire the means by which these fishes retain their proper positions in the water, without clinging by their fins or teeth, and while they are free for such efforts as enables them to seize their food. The apparatus by which they attach themselves resembles a boy's sucker, the organ being pressed against the surface to which the creature is to be fixed, the centre is drawn by muscles in the same manner that the sucker is drawn with the cord, and thus a vacuum is made. In the cuttle-fish we see a modification of this apparatus: the suckers are on the extremities of their processes, or arms, and become instruments of prehension and of locomotion. They are capable of turning in all directions, either to fix the animal or drag it from place to place. In the Indian Seas, these creatures become truly terrific from the length of their arms, which extend to eight or nine fathoms, and from the firmness with which they cling. Dr. Shaw tells us, that on throwing a fish of the species cyclopterus lumpus into a pail of water, it fixed itself so firmly to the bottom that, by taking hold of the tail, he lifted up the pail, although it contained some gallons of water.—[Sir. C. Bell's Bridgewater Treatise on the Hand.]

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29tf RM&F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. S1 R J M M & F

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
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☞ **TOWNSEND & DURFEE**, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M & H. R. R. Co., Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833. } F3 tf

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Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

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A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR,
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New-York, August 14, 1833.

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☞ Ninety-five tons of	1 inch by	½ inch,	*Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit
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Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. 473meowr

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☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendent of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

STEPHENSON,

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☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.
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Also, Flange Tires turned complete.

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SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m25

[*From the London Morning Herald, Aug.* 8.]

DR. DIXON, THE AFRICAN TRAVELLER.

Extract of a letter, dated Cape Coast Castle, 28th April, 1833.

"I fear I have been guilty of great neglect in not sooner communicating to you the result of my inquiries respecting the fate of Dr. Dixon. These particulars I shall, however, now briefly recapitulate to you, that you may be able to answer any inquiries on the subject: on their correctness I believe you may perfectly rely.

"His Majesty's ship Brazen, having Capt. Clapperton and the expedition on board, on her voyage down the coast to Bagadry (from whence it was intended the expedition should start,) touched at Whycah, a small town on the Dahomey coast. Here the gentlemen of the expedition landed, and were hospitably entertained by a Senhor de Souza, the most notorious and extensive slave dealer on the coast of Africa. While here, Dr. Dixon expressed a strong desire to penetrate into the interior through Dahomey, so as to rejoin Capt. Clapperton and his companions at Katunga, or, as it is called on the coast, Eyeo. M. de Souza readily offered his services, and actually accompanied the Doctor to the Court of Dahomey, at an immense expense to himself, being obliged, when visiting the King, to make him large and valuable presents. Dr. D. was well received by the King, who swore not only to protect him while passing through his own dominions, but to use his power and influence to procure for him similar favor and protection from those chiefs through whose dominions he must needs pass. The Doctor accordingly left Dahomey well escorted, and the King, or Chief, into whose country he was about to enter, having also sworn to afford him every protection and assistance, he had every prospect of being able to reach Katunga long before Capt. Clapperton. There it was, however, that his ignorance of the customs of the country, and impatience or irritability of temper, cost him his life. When approaching the principal town, the King, attended by his sons and Chiefs, came out, as is customary, to meet him; and the King desired his eldest son to swear fidelity to the stranger, after the fashion of the country. You will, perhaps, recollect that this is done in this part of Africa by the party drawing a sword, or kind of sabre, (more like a bill-hook than any thing else) and making a long harangue, using all the while the most violent and angry like gestures, and pushing the point of the sword almost down the throat of the party in whose favor the oath is taken: in fact they show their dexterity by dutting close to the face without actually touching it. Dr. Dixon unfortunately misunderstood the meaning and nature of the whole ceremony, and conceiving from the gestures and appearance of the King's son, that he meant to kill him, drew his sword and plunged it into his body. Instantly all was uproar, and the Doctor would, of course, have been sacrificed on the spot, had not the King interfered, and ordered him to be guarded into the town, declaring that he would not break his oath, even although his own son had been stabbed;—it was, besides, against the "Fetish" of that country, to shed blood in the King's presence. Dr. D. was ordered to leave the country the next morning, and with an escort from the King, proceeded on his journey accordingly. The instant, however, that he passed the boundaries of the King's dominions (when, according to their ideas, the King's oath was no longer binding,) his escort fell upon him and murdered him.

"This, I have reason to know, is a true and correct account of Dr. Dixon's lamentable fate."

The Hon. R. G. Van Polanen, whose death was mentioned under our obituary head on Saturday, was a genleman of distinguished worth and ability. He was a native of Holland and has represented his country with credit and dignity in the four quarters of the world—in Europe, as the diplomatic agent of his government in Switzerland and at some of the continental courts—in Asia, as the head of the judiciary of the Dutch Colony of Batavia—in Africa, as the incumbent of a high civil station at the Cape of Good Hope—in South America, in a similar situation at Dutch Guiana; and in North America, as Consul General during the administration of Washington, and during that of Jefferson as Minister. This was the last public office which he held. He was ardently attached to the independence and ancient republican institutions of his native country, and when Holland was merged in the empire of France he refused to accept office under the new order of things, and for the last thirty years resided in this country, as a private citizen, in the enjoyment of an easy fortune and literary leisure At a late period of his life [illegible] from the present Dutch government the offer of the first law office in the Colony at Batavia, which he declined on account of his ill health and advanced age. He was educated at one of the Dutch universities and was learned in classic authors, in the civil law, in the literature of his own country, of Italy, Germany, France and England. With English literature in particular he had attained a minute acquaintance rare in a foreigner. He was acquainted in early life with Fox, Voltaire and Gibbon, concerning the latter of whom he used to relate many agreeable reminiscences of conversations held at his weekly public dinners and *soirées* while residing at Lausanne, where might be met at one period or other all the learned and accomplished men of Europe, who could afford to travel. In this country, his public duties had not only brought him into official connection, but personal intimacy with Washington, Hamilton, the elder Adams, Jefferson, and Madison. He was simple in his habits of life, frugal in his ordinary expenditures, but highly liberal for all worthy objects. The mildness and gentleness of his manners made him beloved by all who had the good fortune of his acquaintance. He was of the old school of Dutch scholars and statesmen, proud and fond of the ancient glories, manners and institutions of his country, and an adequate representative of the principles, habits and studies which produced De Witt, Barneveldt, and Grotius.—Evening Post.]

In reference to a baneful exudation from the earth's surface, on the coast of Africa, the following anecdote of Com. B—— and Sir Niel Campbell, then governor of Sierra Leone, related to me by a friend on whose veracity I can implicitly rely, deserves to be recorded. I must premise, that it occurred during the rainy season, when these exhalations are much more dense than at present. Sir Niel sent an aide-de-camp on board early one morning to invite the commodore to breakfast at eight o'clock, who excused himself by saying that he made it an invariable rule on the coast of Africa not to land before ten. The messenger went on shore, and speedily returned with another message from the governor, saying, that as he was very anxious to see the commodore, he had put off breakfast until ten, and that he had gone to take a ride in the interim. There was no refusing this; and the cautious officer inquired in what direction Sir Niel rode. "To the westward," was the reply. "Then," said he, "I shall perhaps be able to show you why I do not leave the ship before the day is well advanced." The road which the governor had taken was at that time, nearly parallel with the beach, by King Tom's Point, and only a short distance from it. Commodore B—— took the aide-de-camp to the gangway, and after looking a little time, pointed out to him the governor's course by his hat and feather, the last of which was distinctly vissible, waving over the sheet of mist which covered the ground, himself and his horse being completely enveloped in it. The young soldier expressed great astonishment at the singular phenomenon, and said he was sure that no one on shore was aware of the existence of so dense and dangerous an envelope. Not long after this Sir Niel Campbell fell a victim to the climate.—[Dr. Leonard's Voyage on the Slave Coast.]

Mr. Leslie.—We regret to hear that this admirable painter is about to leave England for America. An offer to preside over the drawing classes of a public institution, the emoluments of which will not exceed 300*l.* per annum, some forty miles from New York, has, it is said, tempted him to emigrate. We could scarcely adduce a more striking proof of the wretched encouragement given to the Fine Arts in this country. Mr. Leslie, confessedly at the head of his profession, and an artist who has "golden opinions from all sorts of men," is about to leave the country, in all probability forever, because it may be presumed he cannot realize some three or four hundred pounds per annum by his pencil. Truly this circumstance reflects but litie credit on either the national taste, or the national liberality. Our English Raphael, Stothard, has never made more than has been sufficient for the subsistence of himself and family; Hilton has received but slender encouragement; Thompson, the late Keeper of the Academy, and an historical painter to boot, has retired in disgust from his profession; Danby has expatriated himself to get out of the reach of the myrmidons of the law; and more than one of our deservedly popular sculptors have been compelled to take refuge from the importunities of their creditors in the *Gazette!* We cannot wonder that our painters, even those whom we are most accustomed to honor, should embrace any proposal that seems likely to place them beyond the reach of such contingencies. Mr. Leslie had painted three of the most beautiful modern pictures extant, viz:—Sir Roger de Coverly going to Church with the Spectator; Sancho Panza before the Duchess; and May Day in the reign of Queen Elizabeth. For the best and most authentic Portrait of Scott (so at least say his family and friends) we are also indebted to his pencil. The world of art will therefore lose in him one of its brightest ornaments. The Americans claim, we believe, Mr. Leslie as a countryman; they have no title to his presence on that score, as he was born in London; although the greater part of his life has been spent in the United States. This is the second member of the English Academy of whom America has deprived us. Allston has been long a resident in Philadelphia. Mr. Newton is also, it is rumored, about to leave us, but from a different cause. He has married an American lady, and is moreover an American by birth.—[United Service Journal.]

MARRIAGES.

On the 5th instant, at Utica, by Thomas H. Hamilton, Esq., Mr. BENJAMIN SMITH, to Miss ELLEN GRIFFITHS, all of Steuben.

On Wednesday evening last, by the Rev. Mr. Aikin, the Rev. ALEXANDER M. MANN, of Ithaca, to SUSAN, daughter of Thomas Walker, Esq. of this city.

This morning, by the Rev. Thomas E. Vermilye, Mr. WILLIAM STONE, of Rahway, N. J. to Miss ANN MARIA MOTT, of this city.

Last evening, at St. Ann's Church, Brooklyn, by the Rev. C. Cutler, CLARENCE D. SACKETT, to EMILINE, daughter of Saml Fleet.

On the same evening, by the Rev. D. L. Carroll, ROBERT SPEIR, Jr. to HANNAH, daughter of Samuel Fleet.

On the 27th ult. Mr. William M. Barton, of Grainger county, Tennessee, to Miss Maria, daughter of John Donaldson, Esq. of Jefferson, county. Also, in Jonesboro' on the 27th ult. Mr. Thomas B. Emmerson, to Miss Eliza Green, daughter of Mr. John Green.

On Thursday afternoon last, Mr. Hiram D Pearce, of Troy, to Miss Sarah Jane Wiswall, of Lansingburgh.

In Salisbury, on the 26th ult. Mr. George W. Holley, to Miss Caroline E. Church, daughter of the Hon. Samuel Church.

In Geneva, on the 27th ult. Mr. John A. Crossman, to Miss Gertrude Dayton, only daughter of Dr. D. Dayton.

At Westfield, Chautauque co. on 12th ult. Capt. Ira R. Bird, to Miss Caroline E. Beecher.

At Rutland, (Vt.) on Wednesday the 11th inst. by the Rev. John Hicks, ROBERT SWEENY, Esq. of Montreal, to CHARLOTTE, daugter of Robert Temple, Esq. of the former place.

In Waterbury, Vt. on the 5th inst, Mr. AHIRA J. RICHARDSON, to Miss MARY ANN BANCROFT, both of that place.

In Geneva, N. Y. on the 10th instant, by the Rev. Mr. Bruce, George C. Dixon, Esq. Attorney at Law, of Penn-Yan, Yates Co., to Miss Henrietta C. C. Gourgas, step-daughter of John A. Coffin, Esq. of Geneva.

In Phelps, on the 5th inst. Mr. Benjamin Poorman, to Miss Roxey Hutchins, both of that place.

In Canoga, Seneca Co., by Rev. Mr. Hall, Mr. L. C. Boardman, of this village. to Miss Lucinda Stout, of the former place.

At Milan, Huron Co., Ohio, Sept. 3, by the Rev. Mr. Judson, Mr. Harry Chase, merchant of Ludlowville, N. Y., to Miss Delia Conger, daughter of Elijah Conger, Esq. of the former place.

DEATHS.

Of scarlet fever, yesterday, 18th instant, GEORGE, aged four years, and this morning HANNAH MURRAY, aged seven years, children of George W. Giles, Esq.

This morning, EUGENIE, youngest daughter of W. W. Montgomery, of New Orleans.

Last evening, of Consumption, NANCY, wife of David McCreary, in the 44th year of her age.

On Monday morning, the 16th inst., the Rev. Joseph Brown Cor. Sec'ry. of the American Seamen's Friend Society, aged 46

In Oneida village on the 11th ult. the Rev. Hez'h N. Woodruff, aged 71.

At his residence, near Urbana, Ohio, on the 6th instant, of bilious fever, ANDREW WAY, Esq. for many years one of the most esteemed, as he was one of the worthiest, inhabitants of Washington City, and formerly printer to Congress.

In Baltimore, Isaac Phillips, late Navy Agent, and one of the earliest Captains in the U. S. Navy.

In Havana, in the month of August last, of the Asiatic cholera, after an illness of only 15 minutes, Enrico Causici, late of New-York, sculptor.

At Whitestown, on Wednesday the 4th instant, HORACE T. MITCHELL, aged 18 years, son of Amos Mitchell, formerly of Boonville.

In Hardwick, Vt., Mr Gershom Cobb, aged 38.

In Deerfield, Col. Elihu Hoyt. He was chosen a representative and senator in the Legislatre for twenty seven successive years.

In Westborough, Dexter, son of Jonas Libbey, aged 5 years.

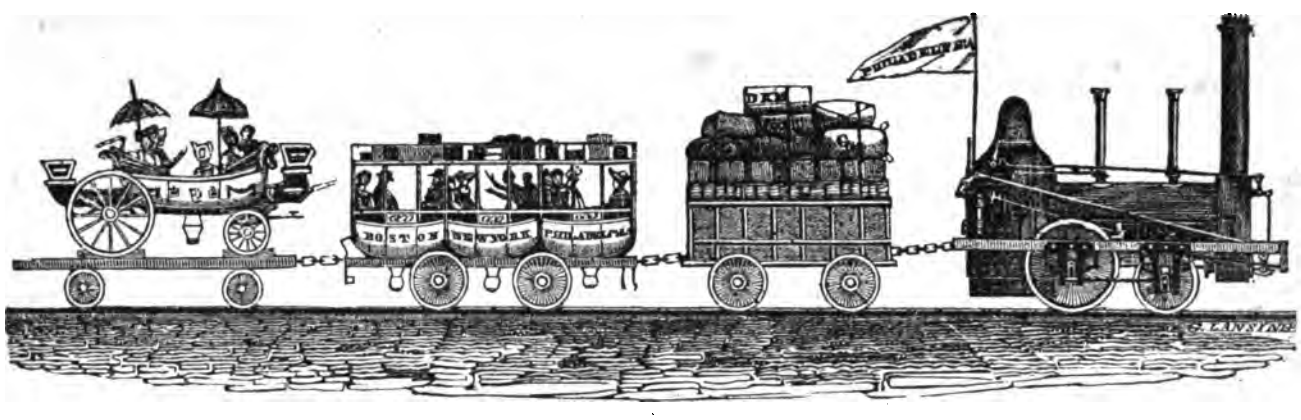
In Cambridgeport, Mrs. CLARINDA R. PAIGE, aged 28, wife of the Rev. Lucius R. Paige.

At West Bridgewater, the Hon. DANIEL HOWARD, in the 85th year or his age.

In Montpelier, Vt., on the 3d inst, GEO. H. PRENTISS, Esq., son of Hon. Samuel Prentiss, aged 28.

In Royalton, Vt., August 1st, Mrs. JERUSHA DEWEY, wife of Ebenezer Dewey, Esq., aged 66.

At New Orleans, 1st Sept., Mr. Nehemiah Ludlum, aged 21 years, a native of New York; Mrs. Catharine C. Ludlum, aged 18; Mr. Solon Hill; 31st ult., after a short illness, of the prevailing epidemic, Mrs. Augusta H. Hunt, aged 35 years, a native of Portland, Me.; of yellow fever, Joshua Mezick, Jr. in the 21st year of his age, and George H. Mezick, aged 19 years, natives of Baltimore; 1st inst., of the prevailing fever, Mr. Abner Cox, aged 32 years; 31st ult., of the prevailing epidemic, Mr. Eugene Flanagan, aged 22 years, a native of Ireland; Mr. Eugene Dioniks, a native of Baltimore; of yellow fever, Mr. Wm. Stebbins, aged 22 years, a native of the State of New York, and for the last year or two a resident of Mobile; 1st inst., Mr. Thos. Pearson, aged 30 years: of the prevailing epidemic, Mr. J. V. Debanne, a native of Paris, and late from New York; 2d inst., of yellow fever, Mr. Eli B. Hoyt, a native of Connecticut, aged 25; of yellow fever, Mr. Jonathan Wadley, aged 24, a native of Oxford, Ohio.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, SEPTEMBER 28, 1833. [VOLUME II.—No. 39.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, SEPTEMBER 28, 1833.

We have observed with much pleasure for several days past, that an experiment was being made in Broadway, between Barclay and Murray streets, to test the utility, and, as *we* believe, the *superiority*, of *Mr. M'Adam's* plan of forming the covering of our streets with fine *broken* stone, instead of the ordinary pavement. We do not entertain a doubt of their eventually superceding entirely the ordinary pavement. The superior convenience and comfort, as we conceive, of M'Adamized streets, when properly constructed, over the common pavement, will be found to consist in their smoothness of surface, and the ease with which they may be kept clean, as well as in their permanence. We perceive, however, that those who have the management of this "experiment" have adopted a plan *widely* differing from what we conceive to be the *true* one—so different, indeed, as to be *directly contrary* to the mode now in extensive use in England. Instead of *raising* the centre, a deep trench is dug, on the bottom of which is laid a covering of *flat stones* of from 20 to 50, or 70 lbs. weight, and over this is thrown a mass of broken stone, 10 or 12 inches in depth, and varying in size from three to *fifteen* ounces in weight.

This cannot certainly be considered as giving the plan, which they propose to follow, a fair test. No better location in the city, perhaps, could be found to show off the success of the plan than that selected by the Corporation in Broadway near the Park, and therefore a fair experiment should be made.

If John Loudon M'Adam were consulted upon the subject, he would say *dig no trenches*, but raise the centre from 3 to 5 inches, in a width of 30 feet, by throwing the earth from the sides, or from a distance. Let it be made uniform in its compactness and surface, that it may settle properly. Place the gutter stone, which should be of a thickness to correspond with the depth of broken stone to be laid on, and grooved or hollowed on the top, close beside the curb, after which put on about three inches in thickness of material, or broken stone, the largest of which should not *exceed six ounces in weight*. Let this be laid on of equal thickness, and then made compact with a roller—cast iron, if you please—which will give a uniform surface. Then put on another and another coat of stone, broken fine as before, and roll it down, until the covering is 10 or 12 inches in thickness, which will be found *ample for all purposes*, provided it has been *properly* managed in laying it on.

The stone should be broken so fine as to form, after a little use, a solid mass; so much so as to become impervious to water, which will, if permitted to filter through, surely cause the large stone at bottom to settle, and the surface, of course, to become uneven. A good road may probably be made upon the present plan, but it will cost double, and still not be as good as a road built after the rule laid down by Mr. M'Adam. We trust now a beginning has been made, to do away with pavements, that the measure will be carried into full operation, that our citizens may be able to judge for themselves of its utility and convenience.

The communication from Mr. Bulkley, which will be found in this number of the Journal, has been several weeks in our possession. It has been delayed in consequence of having other matters on hand, which we deemed of more importance to our readers than the continuation of a controversy, in which the main subject has in a great measure been lost sight of.

We are deeply sensible of the importance, to the Journal, of a free discussion of the merits of the various modes of constructing Railroads, in its columns, and would, therefore, suggest to those who favor us with a description of their inventions, or with their views of the inventions of others, the importance of avoiding personalities. An argument, to sustain which personal reflections are necessary, is hardly worth the ammunition; and, aside from the unfavorable influence it has upon the success of the Journal, we are unwilling to be the medium of a controversy, which, when thus carried on, can be productive of no beneficial results.

Lexington, Sept. 13th, 1833.

To the Editor of the American Railroad Journal:

Dear Sir—I wrote to you a few days ago some further observations on the subject of Arches. If you have received that communication, and consider the matter worth a place in your Railroad Journal,* I must request you to have the kindness to add the following note at the bottom. Very respectfully, V. D. G.

Note.—The formula referred to above (as given in the 34th number of this Journal, page 531,) for determining the value of the *vertical axis* of the required ellipse, was by some inadvertence written wrongly in the manuscript. It should have been the following:

$$a = \frac{1}{2}p \times \frac{\left\{\dfrac{c'.\overline{2r+p}+2ch}{2c'r+2ch}\right\}^{\frac{1}{3}}}{\left\{\dfrac{c'.\overline{2r+p}+2ch}{2c'r+2ch}\right\}^{\frac{1}{3}}-1}$$

Active measures for the establishment of a railway between Southampton and London have been revived, with increased prospects of ultimate success. The project has been taken up with much spirit in London, and shares to the amount of $50,000 are said to have been subscribed by one house.

A discovery of considerable importance as connected with the production of steam, has just been made by the superintendent of one of the gas establishments in London. He has ascertained, says the Court Journal, that an excellent fuel may be provided in coke, gas, tar, and water, applied in particular proportions; and as the weight of this fuel is little more than one third of the quantity of coals requisite to produce the same result, it will no longer be difficult to establish communication by steam with India and other distant parts of the world, the great and indeed hitherto insuperable objection, the weight and bulk of the fuel, being now removed. Colonel Torrens, the Member for Bolton, some time since we understand took out a patent for a discovery of a locomotive power, still more astonishing than this, for his principle was a power derived from an article requiring so little bulk that a quart of the liquid would produce sufficient for the impulsion of a ship or carriage over fifty miles. The subtility of this article, however, is said to be such, that it cannot be confined within any known metal, and therefore the discovery is without beneficial result. There is no objection of this kind to the discovery above named,

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* See Railroad Journal, last number, page 593.

Reply of R. Bulkley to Uriah A. Boyden, on the subject of the Guard Rail. To the Editor of the American Railroad Journal.

Sir,—It being a declared purpose of our *government* to encourage useful improvements, we have a right, at all times, to presume that the *people* protected by it will not, whether they be native born citizens, or citizens by *adoption*, unreasonably attempt to thwart the rise and progress of such improvements. And if, after an object of improvement becomes publicly *announced as accomplished, and approved of by competent judges*, and only awaiting events for practical application, any individual feels inclined to contest, in opposition thereto, he should *first satisfy himself* that he is *competent to the undertaking*—that he is *master* of the part of the subject he feels a desire to espouse; lest he should subsequently become possessed with the mortifying reflection of having failed to enlist any sensible, reflecting man, under his banner.

The 'New-York Patent Guard Rail,' composed of a malleable iron rod, or rods incased in cast iron, was announced as having been perfected and highly approved of by numerous scientific engineers; and it may be said to have been approved of by every individual who has minutely examined the rails. It was also announced that rails eight feet long, made on this principle, had been tested, as to strength, with bearers, or *supports*, eight feet apart; that at a single bearing, in the middle of the rail, *ten tons* were applied without affecting the rail—being about four times the weight that would be required in use. And that the respectable founder, in this city, who applied the weights, gave as his opinion, that *twenty tons*, at a single bearing, would not break them. Yet, even after such announcement, and by a more scientific description, Mr. Uriah A. Boyden, of Lowell, Massachusetts, who had *never seen the rails*, appeared, by hostile communication in your Journal, in discussion of the possibility of perfecting that which had already been perfected, and perfected, too, in a most satisfactory manner.

How far Mr. Boyden was master of the part of the subject he espoused, may be inferred by reference to the record of his *conclusions*—the fallacy of which may be understood by quoting one or two, out of the many contained in the various columns of your Journal, comprised in his communications, as, for instance, on the subject of the difference of contraction and expansion, between malleable iron and cast iron. His *conclusion*, following his premise, is contained in these words: 'Hence,' he stated, 'the wrought iron bar may be nearly or quite torn asunder, without any extraneous force being applied to the rail.' This, too, he must have understood as being effected while both were in a heated state; whereas, in practice, when both descriptions of iron are applied together, there is *no* difference in contraction and expansion perceptible. If there be any difference, the one becomes conformed to the other, while *both* are in a heated state; so that castings made on this principle are as *perfect* as if made entirely of cast iron. Besides, if there were, in fact, a difference, a wrought iron rod while in its heated state, say of one inch diameter and a foot long, instead of being 'torn asunder,' would bear being drawn down to a *thousand* feet in length, more or less, without even beginning to *tear it asunder*—hence the fallacy of his conclusion alluded to.

I will quote one more of his, assumed to be, cogent conclusions—it being on the subject of the difference in the wear between malleable iron and cast iron rails. In my description of the manufacture of rails, on which Mr. Boyden's communication was predicated, is stated the 'use of entire metalic moulds,' or chill plates, with a view to cause increased hardness in the rails. In his communication on that part of the subject, he concludes his premise in these words: 'But (says Mr. Boyden) it seems that cast iron wears off about *five times* as fast as wrought iron.'

Such is his conclusion, placed on record in a page of a public journal? I forbear remarks which such a sentence, and such sentences, manifestly intended for effect in opposing, would justify—common sense, in any individual who examines the subject, will determine the merited award. The absurdity of his said conclusion will forcibly appear in the following paragraph:

'In order to wear off iron, or any other substance, it requires substance to come in *contact*, by which one frets off the other. It is but a few days since we were informed, through the public prints, that a culprit, under sentence of death, made his escape from prison by fretting off, or sawing off, malleable iron bars with a *spoon:* we have often had accounts of prison bars being fretted off by a knife, by watch springs, and by various other instruments; and with a single fine-toothed saw—such as used by carpenters—many malleable iron railroad bars might be severed. Such saws are frequently used for the purpose of severing pieces of malleable iron; whereas, perhaps, a single cast iron rail, cast on a chill, as proposed, would resist the effect of a thousand, more or less, of such saws, or other instruments.'

The effect can be too easily ascertained, by experiment, to render it necessary to rely on the speculative conclusions of Mr. Boyden, or other writers of a similar class.

And, having touched upon the rationality of Mr. Boyden's conclusions, I will now allude to the *principle*—the principle by which he has manifestly been actuated, in the course of his hostile remarks on this subject: I allude particularly to the impression he, in his determination to oppose, intended to convey, by *knowingly* perverting extracts, by attributing to Mr. Wood, an eminent and impartial author, expressions made by another individual, which expressions, from their extreme partiality and flat denial of the truth of observations of respectable engineers, were calculated to *substantiate*, if undetected, part of Mr. Boyden's statements in his communications on this subject, but they were also calculated, seriously, to affect the respectability of Mr. Wood as an author. In my reply I directed his attention to this quotation, presuming it to have been an error; and in his next succeeding communication I was surprised to learn that it was *intentional*. 'I (he says) *knew* it was a quotation from Stephenson.' He has so put it on record, and he may now give reason after reason, since detected, and admitted, if he chooses.

In Mr. Boyden's last communication he says much on a new subject, it being the subject of *consistency*; but before replying to it, as a subject, I propose to use it in explanation of his many inconsistencies, although, as I remarked in my last communication, 'I see no use in explaining or pointing out errors to that description of writers;' others, however, may view the subject in its proper light.

I did state in my first reply to Mr. Boyden, that 'his statements were inconsistent with Mr. Sullivan's.' Each of them commented on the same part of the subject, while each were aiming, eagerly aiming, at opposition—each giving his own reasons for condemning or undervaluing the object in question. Therefore, it being in allusion to the incasing of a wrought iron rod with cast iron, I need not again quote their premises; but the sequel, according to Mr. Boyden, is—'Hence the wrought iron bar may be nearly or quite torn asunder, without any extraneous force being applied to the rail;' and the sequel, according to Mr. Sullivan, is—'It will be *loose in the bore;*' whereas they are not only inconsistent in relation to each other, but *both* are wrong in their conclusions—both are inconsistent in relation to the effect in practice. Wrought iron bars, while incased, are firmly bound by the cast iron, and after having been incased, and the cast iron broken off, are as perfect as before they had been so used. Hence their inconsistencies. These conclusions were drawn by those writers, with special allusion to my method of manufacturing rails. Mr. Boyden, finding himself foiled in screening himself from this charge of inconsistency, now, in his last communication, makes his inconsistencies more and more apparent: he states, 'If Mr. Bulkley can conceive of a malleable iron bar being within a hole in a cast iron bar, the hole being larger than the malleable iron bar, and at the same time the malleable iron being strained longitudinally, he will be able to perceive that Mr. Sullivan's and his (Mr. Boyden's) statements can both be true.' In reply to this I will first state, that I do think it a most singular proposition for an opponent in argument to even hint to his antagonist to conceive of a changed object—an *imaginary* object—merely to screen that opponent from the absurdity of his own conclusions; yet the *absurdity* of his proposition exceeds that of his conclusions, if possible. He might, with equal rationality, have said, 'conceive of the materials for a ship being fastened together by bolts of *half an inch* diameter, in holes of an *inch* diameter,' as to speak of drawing or straining a bar of iron longitudinally by the effect of a surrounding object, the *orifice* in the surrounding object being at the 'same time *larger* than the malleable iron bar'—thus showing his conclusions to be *consistent with impossibilities*. And then he speaks of 'conceiving of a malleable iron bar being *longer* than the cast, and its *ends larger* than the calibre of the cast bar:' the idea of *thus* forming a rail is as ridiculous as his conclusions, to which I have adverted.

And as to that word '*consistency*,' in which Mr. Boyden has so much exposed himself, I could, taking his three communications collectively, point out more *inconsistency* than in any equal extent of writing I have ever before read.

And he has so far become entangled by his own errors and misrepresentations, that he has now, as I before stated, not only alluded to a 'changed object,' a rail of different construction from the one he began commenting upon, but in his last communication has attempted to change the definition of a word,—that important word '*consistency*,' so as to make *that* also comport with his writings. Such readers of your journal as have read his last communication casually, may have passed the (*his*) new definition of the word '*consistency*,' unnoticed. At first glance, when noticed, his exposition in lexicography seems to put lexicographers to the blush; for, according to Mr. Uriah A. Boyden, those lexicographers who have heretofore been undoubted as to correctness, can no longer be deemed to be, or be deemed to have been, *masters* of the English language; for Mr. Boyden states that 'every *master* of the English language knows the word *consistency*, as applied to writings, signifies that the parts agree, or stand together, or that it is not self-contradictory; and he adds, that 'it *never* implies that the writing is either *true* or *false*, or that it either *agrees* or *disagrees* with any thing not stated in the writing.'

The absurdity of *this* is only equalled by another in Mr. Boyden's second communication alluded to in your Journal, page 434, third column; wherein it alludes to *his* having stated, that every *intelligent* engineer had now become satisfied as to a specific point; when, in point of *fact*, perhaps not one engineer in a hundred, or a thousand, knew even the outlines of the subject in question; and perhaps in every instance, those engineers, many of whom rank in the first class, who had examined the object to which he alluded, declared their impressions to be directly the *reverse* from what *he* had stated. I alluded to this in my reply as an absurdity on the part of

Mr. Boyden; could it not with propriety be called inconsistent with the fact? If so, it implies that the writing is false. If this view of it be correct, it might be compared to the "killing two birds with one stone," as I advert to one of his absurd or inconsistent statements, to prove the inconsistency of the other in allusion to the true definition of the word consistency; and the very definition he has above given is self-inconsistent, for it does disagree with things not stated in his writing. It disagrees with the publications of lexicographers, which publications are "things" not *stated* in his writings; and *his* definition may with propriety be called inconsistent with theirs, it being contradictory to theirs. Therefore, having quoted Mr. Boyden's definition above, I will now quote the definition by lexicographers, namely, *consistent*—"not contradictory, not opposed;" *consistency*—"agreement with itself, or with any other thing." And *their* definition of the word *inconsistency* is as follows: "absurdity in argument or narration, incongruity"; also of the word *inconsistent* is as follows: "incompatible, not suitable, incongruous, contrary, absurd." This contradiction to *his* definition shows the extreme absurdity of his declaration of what every master of the English language knows, when perhaps every school boy of common understanding would comprehend the fallacy of his definition.

The idea conveyed in the last clause of Mr. Boyden's definition of the word "consistency" is of a most preposterous description. He says "it never implies that the writing is either *true* or *false*." Query: if Mr. Boyden makes false quotations from the writings of others, which he has *admitted* knowingly to have done, is it not "inconsistent" with *truth?* Once more as to his definition of *inconsistency*, as I wish him to understand his errors: he says, "it," meaning consistency, "never implies that the writing is either true or false; or, that it either agrees or disagrees with any thing *not stated* in the writing." Query: suppose two men attempt to describe a specific thing, both give a *wrong* description, and each *disagrees* with the other, would not their writings be deemed to be *inconsistent* with the nature of the thing they had attempted to describe? and would not their disagreed writings alluding to that specific thing be inconsistent with each other, although neither had mentioned the other in his writings?

I am at a loss to account for the desire manifested by Mr. Boyden to misrepresent in the manner he does. In his last communication he says, 'Mr. Bulkley in his last reply to me *denies* having accused me of inconsistency in my writings;' whereas I did not state any such denial. The denial I did state was of a different nature; it alluded to a *previous misstatement* of his, which misstatement of his charged me with saying what I did not say; and 'I *denied* having written any such words;' and I added, that the words which he attributed to me as being the author of, 'were original with himself.' (This previous misstatement of his, to which I have alluded, may be seen in the American Railroad Journal, page 434, first column, and is a kind of *deception*, in which no writer could be justified.] I have already written three times as much as I intended when I commenced, but I find it impossible with few words to do justice to the subject.

When considering that the proposed improvement in question was stated to have been predicated upon practical results, it would I think be difficult to point out an instance under similar circumstances, of hostile attacks of equal virulence; and when considering that such description of attacks are never made by persons who are disposed to encourage useful improvements, the moving cause of that opposition at first seemed mysterious, and led to the supposition that the assailants might have been impelled by strong feelings of ostentation, or from interested motives; the latter forms an, I do not say reasonable, excuse; and subsequently it has appeared that such interested motive did in a measure exist; for, in allusion to the rapid decay of wooden rails, one of the assailants having proposed an improvement in preserving timber for rails, stating that he had reason to think it could be done in such wise as to last thirty, perhaps fifty years;' and the other, in allusion to what I had stated as to the liability of wrought iron to decay and become weakened by crusts of rust, stated, that 'iron may in some degree be defended from rusting by having in combination a small quantity of some other substance.' Whenever, therefore, he may think proper to give a more *minute description* of that '*small*' quantity of some '*other*' substance, I trust he will not choose the subject of the 'Guard Rail' as a prelude to his description.

Mr. Boyden in his last communication had the impertinence to allude to my having slandered him; I detest the very idea of attempting to slander any individual. Were I to know of having written a sentence that should by disinterested judges be deemed to be slanderous, I would hasten to make acknowledgments. Mr. Boyden alludes to it in general terms; he is cautious not to allude to any specific sentence as containing it. I have been cautious that no sentence I have written should contain it; hence his extreme imbecility in making such a charge for shelter to his own errors. Had he have said that I had censured him, he would have made a just remark; I have charged him with making false quotations; he *has* admitted it. I have charged him with inconsistency, and with absurdity; it is therefore for the readers of your Journal to determine whether I have not shown those charges to be well founded in reference to his writings; and I did not make those charges in general terms, but *specifically*.

In the latter part of his last communication he has further conveyed ideas manifesting a degree of meanness which no judicious writer would be guilty of, in attempting, among other remarks, to convey the idea that the severity of my remarks were owing to a fear of being *foiled* in relation to an object in which I had spent time and money in perfecting; but he may consider himself as informed, that the true basis may be discovered in my writings, and that it will require conclusions more just than he has shown himself capable of forming, in his allusions to the 'tearing asunder' of heated wrought iron rods, and of hard cast iron wearing off 'five times' as fast as wrought, before there will be any danger of foiling an improvement predicated upon practical results. It were an insult to presume that the minds of readers, at this enlightened age, could be diverted by such absurdities. No, Mr. Editor, the severity of my remarks were involuntary, they were provoked by the, what most writers consider, unpardonable practice of making false quotations, together with his absurdities which I have above commented upon. A false quotation or misrepresentation put in type in a public journal may, in a subsequent number, be corrected, but this does not correct the *evil;* it may stand for ever in print, and the evil communication may be read and commented upon by persons who have no knowledge of the existence of a contradictory communication.

No, sir; so far from my mind being so intently fixed in favor of this or any other improvement, however valuable, even could I gain an exclusive patent right to all the rails that will be required for all the roads that will be established in the United States for the next twenty years, I would not for it consent to continue an interchange of communications through a public journal, with any individual whose principles permit him to diverge from bounds of propriety.

I therefore appeal to you, as the editor of a public journal, which ranks, and very justly ranks, with the most respectable publications of the day, whether communications should be received and published unqualifiedly, from a man who now upon the columns of your Journal stands self-convicted of *knowingly* making *false quotations*, thus presenting himself *justly* an object for animadversion; and when his improprieties become distinguished each by its proper character, he calls it slander, instead of acknowledging his errors: slander, without alluding to any specific reason. He had none to allude to by which he could be justified, thus practising a principle in writing which it is desirable not to contend with.

Mr. Boyden having made three several communications, and I have replied to them all, the subject, apparently in all its bearings, is before the readers of your Journal, who now have an opportunity of judging as to the real object of attempting to oppose *speculatively*. that which had satisfactorily been accomplished *practically;* and for a minute description of which, with engravings, readers are referred to the American Railroad Journal, Vol. II, No. 14, page 210; and for replies to its opposers, to the same volume, No. 18, page 276; No. 20, page 307; No. 23, page 354; No. 24, page 373; No. 28, page 434; in which are contained numerous extracts from publications of celebrated authors, alluding to practical results on the important subject of *Wooden Rails* and of *Metalic Rails* for railroads.

Respectfully, yours,
R. Bulkley.

[For the American Railroad Journal.]

Mr. Editor,—I am at a loss whether I understand, correctly, what is meant by traction, or the force of traction; for in your first volume, page 405, is a table by Mr. Telford, by which I understand, that on the same piece of road, with a coach of 18 cwt. and seven passengers, on an inclination 1 in 600, at a speed of 6 miles an hour, the force required was 111 lbs. and at 10 miles an hour, the force required was 128 lbs.; that is to say, on the given inclination the force required to move at the rate of ten miles an hour, compared with that required to move at the rate of six miles, was as 128 to 111, or, if the coach were moving at the rate of six miles, and you add to the whole force $\frac{17}{111}$, it will increase the speed to 10 miles an hour—showing a great *gain* by a rapid motion; but in No. 6, of vol. 2, you have published, from the Baltimore Gazette, an essay on Steam Carriages upon Turnpike roads, where the writer says, referring to the same table, "Thus it is proved that the force of traction on a turnpike road varies with the velocity; that is to say, the force required *to pass over one mile, or any given distance*, at the rate of ten miles per hour, is greater than that required to pass with the same load an *equal* hour *distance*, at eight miles per hour, and the resistance on *an equal space*, at eight miles per is greater than at six miles per hour;" being directly the reverse of the conclusion to which my understanding of the table led me, namely, showing a great *loss*, instead of a great gain, by rapid motion, as compared with a slower one. Will you, sir, or will some of your intelligent correspondents, do me the favor to decide which of us has the correct conclusion.

Mine is corroborated by a similar table in one of your numbers, from Major Long. By the late experiments in canal navigation, by subsequent remarks in the same article, from the Baltimore Gazette, and by the laws of matter and motion; for if a carriage were moving on a perfectly horizontal road, with any given velocity, say 50 miles an hour, and had *no* resistance from the atmosphere, or from friction at the axle, or from obstruction at the surface or otherwise, it would continue to move at the same velocity indefinitely. Therefore, on a *level* road, a carriage, whatever be its weight and lading, having attained a given velocity, requires no more power to keep up that velocity than what is necessary to overcome the resistance from the atmosphere, from friction at the axles, and from obstructions at the surface.

You see that these views are calculated very strongly to confirm the opinion which you have heretofore published, on the advantages of large wheels at least on a level road, [see No. 26, current Volume] and this is a matter of no small importance, for it is evident that a road can be made from the Cape of Florida, or from New-Orleans, scarcely varying from a level all the way to Norfolk, and probably to Philadelphia and New-York, by admitting curves which would be no disadvantage on a road of earth. In all the great West, also, roads can be made in various important directions, and of immense extent, without ever departing materially from a level.

You doubtless perceive that I have more enthusiasm than science, and I may remark that I have no scientific neighbors, who have sufficient interest in such speculations, to show me my errors, if they be errors ; and their fallacy may be so plain that you will not willingly occupy your time with them. However, I venture once more to ask, as a great favor, that my mistake, if it be one, may be pointed out. It is a matter of course that I have great confidence in my own views, that they are correct ; and if so, they are of great importance, and go far to show that a road of earth is better than a railroad, at least for one or two valuable considerations. Transportation can be much more rapid, and the carriages will be more durable and less liable to accident.

Suppose a carriage, with wheels 20 feet diameter, and 18 inch tire, each wheel weighing perhaps 3 tons, passing frequently over a well graduated road of common earth, is it not evident that such a road would soon be almost as smooth and as hard as iron ! I am aware of the effects of severe frost, but my mind is principally directed towards the great south, and the great west, where frost occasions very little inconvenience. Let such a carriage set off from an elevation, and descend an inclined plane, sufficient to give it, by the force of gravity, the required velocity. a very small power will then be sufficient to keep up the motion, and its impetus will carry it up another inclination, where it is to discharge cargo, or take in coal and water, and whence it would have the advantage of a descending plane when again setting off.

A carriage with large wheels will have a smooth and regular motion, without trembling or jolting. And if it be true that the expenditure of steam, and consequently of fuel and water, is as the number of revolutions, then the conclusion is inevitably and very greatly in favor of such wheels, and a road of earth. But for the present I will not indulge myself or trouble your readers any further. C. O.

Virginia, Aug. 7, 1833.

On the Undulating Railway. By BENJAMIN CHEVERTON. [From the London Mechanics' Magazine.]

SIR,—Your correspondent, 'Junius Redivivus,' is a clever writer, but an unpractised thinker. He was evidently not brought up a lawyer, to examine both sides of a question. He will do better in time, but at present he is apt to take a single view of things, and, therefore, an incomplete and superficial one, if I may be allowed to say so without giving him offence. But I should be reprehensible in so saying if I did not give an instance in proof of my assertion. I take, therefore, his last communication respecting the undulating railway.

I beg, however, at the very outset, clearly to be understood that I do not contend for any advantages which this sort of railway is alleged to possess over the ordinary level one—not even in theory, much less in practice ; but I limit myself to the assertion that 'Junius Redivivus' has not exhibited the fallacy upon which he says the projector has stumbled, nor proved the existence of one. Is he aware of what has been done in the case—of the nature of the experiment shown at the Adelaide street Gallery of Practical Science and Works of Art ? A carriage, whose moving power was a spring, was wound up to the same tension in each trial, by traversing it backwards a given distance on the floor. If placed alteruately on the level and on the undulating railway, it was found that it travelled a certain distance in the same time, although the extremity of the latter railway was raised six inches above the level of the former. Now, where is the fallacy of which 'Junius Redivivus' speaks ? Is it in the *fact* ? and would he say with an engineer, a friend of mine, that though he should see it he would not believe in it ? All his arguments, indeed, go to prove that the thing is impossible ; but on further consideration he may be inclined to suspect their relevancy to the subject he has taken in hand, rather than the accuracy of his sight. It may, however, be said that the fallacy lies in the inference drawn from these experiments as to the superior advantages of this new form of railway. It is admitted—but then why did not 'Junius Redivivus' apply himself to this point, detect the lurking error, and show that the experimental trials were not fairly instituted ? Instead of this, he contents himself with general reasoning about the impossibility of power being self-generated, maintaining that 'what is gained by an accelerated motion down hill, is balanced by an up hill to ascend in turn ;' that 'no more power can come out of a thing than that we put into it ;' and with giving superfluous utterance to many more such truisms, about which, it is to be hoped, few of your readers need now to be instructed, except, perhaps, some two or three perpetual motion seekers.

I will myself become a 'schemer,' just to show 'Junius Redivivus' that all his arguments are thrown away, that they are altogether beside the question, by proving that they are equally applicable to the following as pretty a subject, *on paper*, as ever was seen. Let there be a series of axles elevated high above the ground, and placed at certain equal distances apart. They are to be actuated by a power sufficient to overcome their own friction on their bearings, and the resistance of the air to the motion of the carriage, &c. A swinging platform is to be suspended from each axle in the manner of a pendulum, and, at the extremities of the arcs which they describe, short roads are to be constructed in order to receive the carriage in its transit from one platform to the other. A slight sketch will explain my meaning better. (Sketch omitted.)

A B are axles ; C D, platforms ; F D, roads. On the arrival of the platform at E, the carriage, being on wheels, will, by its momentum, be carried over the road to the platform at C, and again be launched forward to its next stage, and so on in succession. Will 'Junius Redivivus' be so good as to point out any theoretic absurdity in this notable scheme, however preposterous it may be in a practical point of view. Unlike the undulating railway, its economy of power is acquivocable and undeniable, and yet it is equally open to all 'Junius Redivivus's' up-and-down-hill arguments, and which are in an equal degree irrelevant. If I were to say that the momentum of the platform and its carriage, acquired in the descent from D to F, was more than sufficient to carry it from F to E, I should be chargeable with the nonsense against which his arguments are directed ; for 'the man should, indeed, be laughed at, who asserts that the power of a machine is multiplied by going up and down hill.' Nothing, however, of the kind is asserted, not even, as I understand, by the sanguine projector of the undulating railway, much less by its scientific friends ; but it is contended, and, in reference to the scheme before your readers, with the full assurance of truth, that friction is diminished, and power, therefore, saved, but not multiplied, as 'Junius Redivivus' would have it. That there is less friction in this pendulum mode of conveyance than on a common railway, is evident from the circumstance of its being confined to a trifling motion of the axles in their bearings during the passage of the load through the much greater space of the arc, D E. Not that the diminution of the friction would be exactly in this proportion, for the wheels of the railroad carriage would have to be taken into the account. The case assimilates to that of a large wheel and a small one, and the saving would be in the proportion of the ratio of the pendulum rod and the radius of its axle to the ratio of the carriage wheel and its axle. The advantage here spoken of is unquestionable ; but whether there would be less friction on an undulating than on a level railway, is a debateable point, and 'Junius Redivivus' should have combatted the affirmative instead of fighting a man of straw. He should have shown that friction would not be diminished at any part of the curve, or, admitting a diminution at any place or places, he should have instructed us how it would be compensated by an excess of friction. I need not say where or how—that is for 'Junius Redivivus' to do. The writer in the Athenæum is certainly wrong—not so much from taking an incorrect as an incomplete view of the subject. He has omitted all consideration of the centrifugal force that is generated, and which much influences the result. It may here be asked, how, then, did the experiments exhibit results apparently so much in favor of the undulating railway ? I cannot enter upon this point, as I have not investigated or even seen them ; but there is no doubt that it arose principally, if not wholly, from the inertia of the carriage having been overcome by an extraneous force in the one case and not in the other. The projectors doubtless considered the experiment to be a fair one, but I hope they will not allow themselves to be self-deceived to their own bitter cost.

There is a sort of paradox connected with the subject, which it may be worth while to mention here, especially as I am inclined to think it is at the foundation of those fallacious views which the projectors and supporters of this scheme entertain. Among the latter are some whose eminence and position in the scientific world should have kept them from drawing crude and hasty conclusions. I have said that the axles B A, &c. are to be actuated by a power sufficient to overcome their own friction, the resistance of the air, and that opposed to the passing of the carriage over the roads D E, &c. Now, without further application of power, no progress can be made ; but yet without any continual supply of it, as locomotion proceeds, and simply by a single additional effort in the first instance, effected by the descent of the machine from D to F, not only will the distance D E be accomplished, but another and another, even unto the world's end. That is to say, the initial force, though only just competent to produce motion of a given velocity, is effective for its prolongation at the same rate to any distance, or for any length of time. And this is true, not only of the present scheme, but also of the undulating railway. Oh ! it is absurd, says 'Junius Redivivus,' and begins immediately to smell perpetual motion. He must remember that, by the terms of the proposition, all hindrance is provided against ; the motion therefore, is unimpeded, and no reason can be assigned why it should cease after it is once commenced. The paradox is only in the way of putting the case, for the like may be said of all machinery and moving bodies. It is probable, however, that some confused notions on this head may have led the projectors of the undulating railway to imagine that they had herein an exclusive advantage over the level railway, and that the succession of descents maintains the moving force which is first generated, forgetting that such force needs no supply for its maintenance, and that all that is requisite for its unimpaired existence, is to provide that it shall not be exhausted by demands upon it to meet friction, &c. The same thing takes place on the ordinary railway, though not precisely in the same manner. At first the impelling power of the engine is greatly in excess above the resistance, and constitutes an accelerating moving force up to the point at which it is no longer in excess, or when a uniform motion is obtained. The steam power is now wholly employed in overcoming resistance, and *not* in producing motion, otherwise an accelerated velocity would take place. The motion, therefore, results from the force imparted to, and residing in, the machine, and will continue unchecked for any time or distance, if that force is not drawn upon for any other purpose. If it were an object of any moment to shorten the time in imparting to a carriage the inertia of motion, this may be obtained by a commencing inclined plane on a level railway, as well as on an undulating railway; but that any after advantage can be procured by a succession of them is wholly a mistake.

In connection with this subject and the beforementioned place of exhibition, I beg, in conclusion to draw attention to Mr. Saxton's very ingenious and original mode of propelling a carriage on a railway. It is a reversal in practice of the principle embodied in the windlass of unequal diameters.

I am, sir, yours, &c.

BENJAMIN CHEVERTON.

P. S.—Verily, our coachmakers are wonderfully ignorant of 'the application of the principles of science:' they have not gone deep in their studies, or 'Junius Redivivus' would not have been obliged to tell them that a plate of iron was stiffer placed on its edge than when laid flat. His scientific expedient of accommodating the tension of carriage springs to their load, 'by supplying the absence of flesh and blood by weights conveniently arranged, just as a ship takes ballast on board when her cargo is discharged,' reminds me of a mode of travelling which I noticed in Spain. Two persons being mounted on a mule, one on each side, the lighter pannier was balanced against the other with a load of stones. When 'Junius Redivivus' wrote this remark, 'that no more power can come out of a thing than is put into it,' did it not remind him of his own proposal to employ a steam engine to work an air-pump, for the purpose of having air-guns instead of steam artillery? Surely he too is not 'one of those numerous, unthinking people, who believe that, by making a simple machine complicated, they actually multiply their power,' or who imagine that they cannot produce a thing so well at first as they can at second hand.

These observations, as they are made in good part, so I hope they will be taken. They allude to mere specks, as it were, on the face of the sun, but which are blemishes notwithstanding.

THE PADDINGTON STEAM CARRIAGE COMPANY.—A steam omnibus, constructed for this Company, on the plan of Mr. Hancock, (says e London Mechanics' Magazine,) has at length ade its appearance on the road between the ity and Paddington. We saw it at work on onday, Tuesday, and Wednesday last, and ere very well pleased with the manner of its peration. It seemed to be as perfectly under e regulation of the steersman as any of the val vehicles drawn by horses, went a good al faster, as much so, perhaps, as the crowded ate of the road would allow, and caused no noyance by noise or smoke, to either bipeds r quadrupeds. In external appearance it difrs little from an ordinary omnibus, and conins accommodations for exactly the same numr of passengers. The part for the passenrs is in front, the furnace in the rear, and the gine work (which occupies but a small space, tween the two. The motive power is comnicated by chains, and to one wheel only. e internal arrangements are, we believe, siilar to those of the carriage made by Mr. Han ck, which plied for some time on the Strat d road, and is fully described in the Mechas' Magazine for the 28th April, 1832. All that (apparently) now remains to be done, is to ascertain the average cost of this mode of conveyance, as compared with horse power; and this, of course, must be an affair of time. We trust the Paddington Company will act more openly by the public in this respect than previous speculators have done; and that they will make known the result of their experience, whatever it may be, without any mystification or evasion.

Since writing the preceding notice, we have received the following very frank and satisfactory letter on the subject, from a shareholder of the Company:—

SIR,—The London and Paddington Steam Carriage Company have tried and proved the effectiveness of their carriage, by taking it from Paddington to London-wall, and thence up Houndsditch, through Whitechapel (on market day), and on to Stratford and West Ham, and returning the same way back again; thus proving its capability of proceeding through crowded thoroughfares without inconvenience or liability to accident to the persons in the carriage or others. We have also on Monday begun to ply to and from Paddington to the City for hire; and intend for the present, continuing to go once or twice a day for the purpose of developing the wants of the road, and also such imperfections as may appear in practice, tn order that we may remedy them in the other carriages in progress of preparation. As soon as we have got two more carriages ready, the whole three will commence running in regular succession on this line of road, each carriage performing fourteen journeys to and fro per day, which is nearly the work of three omnibuses and thirty horses. During the early journeys of this single carriage, the fare will be one shilling. We do not, however, wish people to think we have commenced business as we mean to go on; for, at present, we are really only going for the purpose of satisfying the public of the safety and perfect practicability of this mode of travelling, and also of getting practice on the road, so that we may find out and apply every improvement that may be requisite. When the novelty of the thing has worn off a little, it is to be hoped that the road will not be so crowded with curious gazers, as it is every time we now go out, to the great prejudice of the speed of the vehicle, which it requires no small portion of skill and care on the part of the guide to steer with safety through the multitude of coaches, gigs, carts, drays, &c. that constantly beset its path. As it is, a second journey each day would, *at present*, become a perfect nuisance; but as soon as the road, by our frequent journeys, becomes less crowded, we shall, even with the one carriage, go two or three journeys occasionally, *perhaps more*, as soon as we are satisfied that we have adopted every improvement in strength and quality that daily practice may show to be necessary. The carriage has been open to public inspection on these premises for nearly three months: but, now that we go out daily, strangers are not admitted on any account, as it would interfere too much with the regular business of the establishment, and also with the progress of the other carriages.

I have now, sir, presented you with a few *facts* as to the present and future; and facts only, for I hate puffing and lies as much as you can do, in a great national matter like this. I do not know whether I am too sanguine or not, but I conceive we shall be able to satisfy the public that the important question as regards steam-travelling on common roads—*to be, or not to be*,—will now be solved.

I am, sir, your obedient servant,

CANDIDUS.

London, April 24, 1833.

ROTARY PUMP.—Messrs. Hale, Crane & Co. of this city, have obtained a patent for, and established a manufactory of, a new rotary pump, which promises to be a decided and valuable improvement. Two wheels are inclosed in a casing which corresponds with them in size, and which fits closely upon their sides. One of the wheels has, on its periphery, floats or wings, three in number, at equal distances apart—somewhat like cogs; the other wheel has cavities, into which the cogs or floats may fall; both wheels being so placed in their casing as to revolve together, and their peripheries forming a water joint. Through the ends or heads of the casing pass the shafts, which support and turn the wheels. There are two apertures in the casing, through one of which the water is drawn up by the suction produced by the motion of the floats as they recede from the wheel containing the cavities, and through the other the water is discharged, by the approach of the floats towards it. The pump may be put in motion by the hand or other power. One 14 inches in diameter, with the application of the power of two men, will raise and discharge 180 gallons per minute. A pump of this size is already in successful operation at the Simsbury mines in this state; and orders for others have been received from several States in the Union.—[N. Eng. W. Review.]

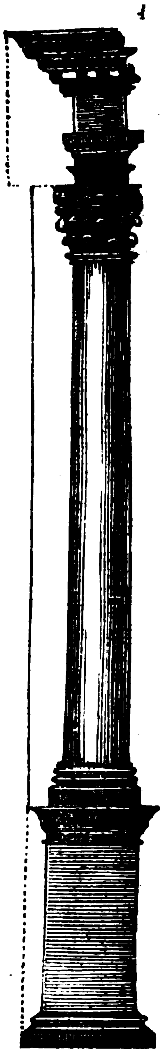
SILK MANUFACTURE.—One of the most gratifying exhibitions we ever witnessed is that of the silk-worm in all its stages, with the mulberry-leaves, eggs, cocoons, chrysalis, miller, &c., together with a complete domestic process of manufacture, which may be seen at the Agricultural Warehouse, North Market street, Boston. The machine which is there in motion was invented last winter, by Mr. Adam Brooks, of Scituate, Massachusetts, and a patent of it, which we have seen, was issued on the late 29th of June. It is an improvement, as it seems to us, of vast importance; for, unlike the Piedmontese Wheel, heretofore chiefly used, which only performed the reeling process, *it combines the reeling and twisting*; and the saving of labor is such, in consequence, that 150 skeins can be made in a day by one woman, and a little girl, to turn this improved wheel, as easily as 40 can by the old. This we learn from those who have tried both. One of the new machines is used in Connecticut, and another in New-York, besides those in the family of the ingenious inventor, who now devote their time, in a great measure, to this business.

Mr. Brooks is one of the Society of Friends. His wife, who superintends the wheel, and has paid some attention to silk-making for several years, had made frequent complaints of the labor lost by the old machine. Her husband doubted the practicability of amending it, and told her so in plain terms—but went to thinking, it seems, and in about three weeks produced this capital improvement. Mrs. Brooks says it was formerly a very hard day's work to make 30 skeins; she can now make 100 in ordinary hours. The silk is beautiful—as smooth as the Italian itself—and stronger than that. We challenge the strongest-fingered editor in the city to break a thread of it. If he succeeds he shall have one of the silk handkerchiefs, we engaged this morning—socks and all.—[Boston paper.]

MR. TREVITHICK.—We regret to learn that this distinguished engineer, who may justly be regarded as the father of steam locomotion in England, died on the 22d May at Dartford, in Kent, after a few days' illness. He was in his 67th year.

Of the Orders of Architecture. [Continued from page 536.]

COMPOSITE ORDER.—The Composite Order is the last of the five orders of columns: so called because its capital is *composed* out of those of the other orders.



It borrows a quarter round from the Tuscan and Doric; a double row of leaves from the Corinthian; and volutes from the Ionic: its cornice has simple modillions, or dentils.

The *composite* is also called the *Roman* and *Italian* order, as having been invented by the Romans; conformably to the rest, which are denominated from the people among whom they had their rise.

Most authors rank this after the Corinthian, either as being the richest, or as the last that was invented: Scamozzi alone places it between the Ionic and Corinthian, out of a view to its delicacy and richness, which he esteems inferior to that of the Corinthian; and, therefore, makes no scruple to use it under the Corinthian, wherein he is followed by M. le Clerc. The proportions of this order are not fixed by Vitruvius; he only marks its general character, by observing, that its capital is composed of several parts taken from the Doric, Ionic, and Corinthian: he does not seem to regard it as a particular order; nor does he vary it at all from the Corinthian, except in its capital. In effect, it was Serlio who first added the *composite* order to the four of Vitruvius, forming it from the remains of the temple of Bacchus, the arches of Titus, Sep timus, and the Goldsmiths, at Rome: till then, this order was esteemed a species of the Corinthian, only differing in its capital.

The order being thus left undetermined by the ancients, the moderns have a kind of right to differ about its proportions, &c. Scamozzi, and after him M. le Clerc, make its column 19 modules and a half; which is less by half a module than the Corinthian. Vignola makes it 20, which is the same with that of his Corinthian; but Serlio, who first formed it into an order by giving it the proper entablature and base, and after him M. Perrault, raised it still higher than the Corinthian.

This last does not think different ornaments and characters sufficient to constitute a different order, unless it have a different height too; agreeably, therefore, to his rule of augmenting the heights of the several columns by a series of two modules in each, he makes the *composite* 20 modules, and the Corinthian 18; which, it seems, is a medium between the porch of Titus and the temple of Bacchus.

M. Perrault, in his Vitruvius, distinguishes between composite and composed order. The latter, he says, denotes any composition whose parts and ornaments are extraordinary, and unusual; but have, withal, somewhat of beauty, both on account of their novelty, and in respect of the manner or genius of the architect: so that a *composed* order is an arbitrary, humorous, composition, whether regular or irregular.

The same author adds, that the Corinthian order is the first composite order, as being composed of the Doric and Ionic, which is the observation of Vitruvius himself.

GOTHIC ARCHITECTURE.—After having described the five Orders, it will naturally be expected that we should say something of the *Gothic* style; we shall therefore give a general view of the distinguishing features of this species of architecture.

The attention to Gothic architecture having only been lately revived, the practice has not hitherto been digested into so systematic an order as the Greek or Roman; and it is not a little extraordinary, considering that during the ages in which it was extensively practised, its operations were directed by men of science and literary habits, that no written rules have been discovered in the religious houses which were then the only depositories of knowledge. This has led Mr. Knight, and other men of observation, to assert, that each architect proceeded independently of rules, and worked in the manner which to him appeared best calculated to produce a striking effect, and that it was in consequence of the absence of determined rules, that this school rose to the degree of sublimity it attained. This is denied by other able and enlightened men, who have paid much attention to the subject, especially Dallaway, Milner, and Hawkins, who maintain, that although few arranged rules and proportions have been published in books, yet architects and workmen were constantly guided by known rules, agreeably to the prevailing mode. It is evident, although not so rigidly confined as the Egyptian, that the Gothic architects were fully as much limited as the Roman; for the contrast between the massy Norman style, and the latter, or florid Gothic, is not greater than what was produced by varying from the plainness, simplicity, and oblong forms of the ancient Greek temples, to the circular, delicate, and highly ornamented edifices of the late Roman.

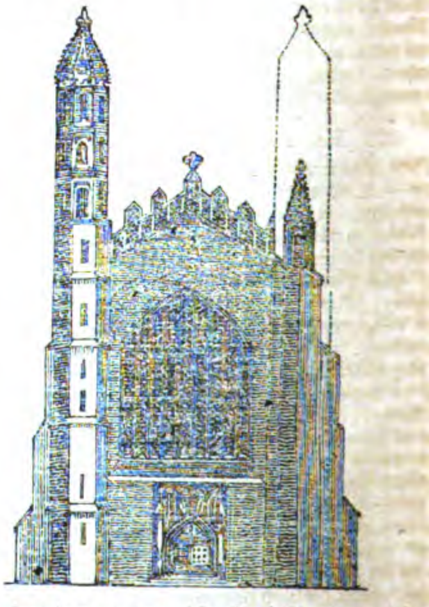
The Gothic style having been employed almost exclusively in edifices appropriated to the purposes of the Christian religion, the outlines of the ground plan have almost uniformly been a cross. In the Greek and Roman oblong temples, the ratio of the length and breadth was determined by the number of columns placed at nearly equal distances along the ends and sides, while that of the height was regulated by the diameter of the column; but in Gothic, where seldom any columns have been placed on the outside of the edifice, and the use of arches proving a relief from constraint within it, it is alleged that the proportion of the length to the breadth has been determined by triangles and squares. Of this, Mr. Hawkins, in his History of the Origin and Establishment of Gothic Architecture, (chap. 10,) has produced an early instance from Cæsar Cæsarianus, a celebrated architect of Milan, who, in an elaborate commentary annexed to his translation of Vitruvius, has explained the principles of Gothic architecture.

With regard to the form of the *essential parts*, they are mostly defined in the following description of the three orders of architecture, as given by Dr. Milner:

The *first order* is characterized during its formation—that is to say, till near the latter end of the 12th century,—chiefly by its acute arch (its pillars and other members being frequently Saxon); but after its formation, not only by the narrowness and acuteness of its arch, but also by its detached, slender shafts, its groining of simple, intersecting ribs, its plain pediments without crockets or side pinnacles, and its windows, which were either destitute of mullions, or have only a simple, bisecting mullion, with a single or triple trefoil, quatrefoil, or other flower, in the head of them. Of this order are the east end of Canterbury, the west end of Lincoln, and the whole of Salisbury Cathedrals, besides the transepts of York Minster and Westminster Abbey.

The *second order* is marked, not only by the fine turn of its perfect equilateral arch, but also by the cluster columns, being, for the most part, formed each course out of the same stone; by the elegant, but not over-crowded tracery of its windows and groining, by its crocketted pinnacles, tabernacles, and pediments, the latter of which, towards the conclusion of the fourteenth century, were made with an ogee sweep towards the arch they covered. To this order belong the nave of Westminster Abbey, the nave and choir of York Minster, the naves of Winchester, Exeter, and Canterbury Cathedrals, Wykeham's two colleges, St. Stephen's Chapel, &c.

The *third order* is known, not only by the flatness of the point of the arch, but also by its numerous, large, and low descending windows, together with the multiplicity and intricacy of its tracery; by its pendents from the roof; by the minuteness and profusion of its ornaments, both exteriorly and interiorly; by its fan-work and numerous shields and devices on the ceiling. To this order belong St. George's Chapel, Windsor, King Henry the Seventh's Chapel, Westminster, and King's College Chapel, Cambridge, of which the following is an elevation, showing on one side the buttresses, the tower being supposed to be removed, and on the other the tower, which not only supplies the place of a buttress at the end, but assists also in supporting a considerable por-



tion of the thrust in the direction of the length of the chapel.

One of the finest features of Gothic architecture, and which, in many instances, still forms the most striking ornaments of our cities, is the tall, tapering spiral, which was first built of wood by the Normans, and afterwards in stone, early in the 13th century. In the course of the 14th and 15th centuries, they were greatly increased in number.

Babbage on the Economy of Manufactures.

[Continued from page 600.]

237. As connected with this subject, and as affording most valuable information upon points in which, previous to experiment, widely different opinions had been entertained, the following extract is inserted from Mr. Telford's Report on the State of the Holyhead and Liverpool Roads. The instrument employed for the comparison was invented by Mr. Macneill; and the road between London and Shrewsbury was selected for the place of experiment.

The general results when a waggon weighing 21 cwt. was used on different sorts of road, are as follows:

	lbs.
1. On well made pavements, the draught is	33
2. On a broken stone surface, or old flint road - - - - - - -	65
3. On a gravel road - - - - -	147
4. On a broken stone road, on a rough pavement foundation - - -	46
5. On a broken stone surface, upon a bottoming of concrete, formed of Parker's cement and gravel - - - - -	46

The following statement relates to the force required to draw a coach weighing 18 cwt., exclusive of seven passengers, up roads of various inclinations:

Rate of inclination.	At six miles per hour.	At eight miles per hour.	At ten miles per hour.
1 in 20	268 lbs.	296 lbs.	318 lbs.
1 in 26	213	219	225
1 in 30	165	196	200
1 in 40	160	166	172
1 in 600	111	120	128

238. The time in which the goods produced by any new factory can be brought to market and the returns realized, should also be well considered, as well as the time the new article will take to supercede those already in use. If the article is consumed in using, the new produce will be much more easily introduced. Steel pens readily took the place of quills; and a new form of pen would, if it possessed any advantage, as easily supercede the present one. A new lock, however secure, and however cheap, would not so readily make its way. If less expensive than the old, it would be employed in new work: but old locks would rarely be removed to make way for it; and even if perfectly secure, its advance would be slow.

239. Another element in this question which should not be altogether omitted, is the opposition which the new manufacture may create by its real or apparent injury to other interests, and the probable extent of the influence of that opposition. This is not always foreseen; and when anticipated, is often inaccurately estimated. On the first establishment of steamboats from London to Margate, the proprietors of the coaches running on that line of road petitioned the House of Commons against them, as likely to lead to the ruin of the coach proprietors. It was, however, found that the fear was imaginary; and in a very few years the number of coaches on that road was considerably increased, apparently through the very means which were thought to be adverse to it. The fear which is now entertained that steam-power and railroads may drive out of employment a large portion of the horses now used, is probably not less unfounded. On some particular lines such an effect may be produced; but in all probability the number of horses employed in conveying goods and passengers to the great lines of railroad, will exceed that which is at present used.

ON CONTRIVING MACHINERY.

240. The power of inventing mechanical contrivances, and of combining machinery, does not appear, if we may judge from the frequency of its occurrence, to be a difficult or a rare gift; and, amongst the vast multitude of inventions which have been produced almost daily for a series of years, a large part has failed from the imperfect nature of the first trials; whilst a still larger portion, which had escaped the mechanical difficulties, failed only because the economy of their operations was not sufficiently attended to.

The commissioners appointed to examine into the methods proposed for preventing the forgery of bank notes, state in their report, that, out of one hundred and seventy-eight projects communicated to the bank and to the commissioners, there were only twelve of superior skill, and nine which it was necessary more particularly to examine.

241. It is, however, a curious circumstance, that although the power of combining machinery is so common, yet the more beautiful combinations are exceedingly rare. Those which command our admiration equally by the perfection of their effects and the simplicity of their means, are found only amongst the happiest productions of genius.

To produce movements even of a complicated kind is not difficult. There exists a great multitude of known contrivances for all the more usual purposes, and if the exertion of moderate power is the end of the mechanism to be contrived, it is possible to construct the whole machine upon paper, and to judge of the proper strength to be given to each part as well as to the frame-work which supports it, and also of its ultimate effect, long before a single part of it has been executed. In fact, all the contrivance, and all the improvements, ought to be made in the drawings.

242. On the other hand, there are circumstances dependent upon physical or chemical properties, for which no drawings will be of any use. These are the legitimate objects of direct trials. For example: if the ultimate result of an engine is to be that it shall impress letters upon a copper-plate by means of steel punches pressed into it, all the mechanism by which the punches and the copper are to be moved at stated intervals, and brought into contact, is within the province of drawing, and the machinery may be arranged entirely upon paper. But a doubt may reasonably spring up, whether the bur that will be raised round the letter, which has been punched upon the copper, may not interfere with a proper action of the punch for the letter which is to be punched next adjacent to it. It may also be feared that the effect of punching the second letter, if it be sufficiently near to the first, might distort the form of that first figure. And if neither of these evils should arise, still the burs produced by the punching might be expected to interfere with the goodness of the impression produced by the copper-plate; and the plate itself, after having all but its edge covered with figures, might, from the unequal condensation which it must suffer in this process, change its form, so as to render it very difficult to take off impressions from it. It is impossible by any drawings to solve these difficulties, experiment alone can determine their nature. Such experiments have been made, and it is found that if the sides of the steel punch are nearly at right angles to the face of the letter, a very inconsiderable bur is produced; that at the depth which is sufficient for copper-plate printing, no distortion of the adjacent letters takes place, although those letters are placed very close to each other; that the small bur which arises may easily be scraped off; and that the copper-plate is not distorted by the condensation of the metal, and is perfectly fit to print from, after it has undergone this process.

243. The next stage in the progress of an invention, after the drawings are finished, and the preliminary experiments have been made, if any such should be requisite, is the execution of the machine itself. It can never be too strongly impressed upon the minds of those who are devising new machines, that to make the most perfect drawings of every part tends essentially both to the success of the trial and to economy in arriving at the result. The actual execution from working drawings is comparatively an easy task; provided, always, that good tools are employed, and that methods of working are adopted, in which the perfection of the part constructed depends less on the personal skill of the workmen, than upon the certainty of the methods they employ.

The causes of failure in this stage most frequently arise from errors in the preceding one; and it is sufficient merely to indicate a few of their sources. They usually arise from having neglected to take into consideration that metals are not perfectly rigid, but elastic. A steel cylinder of small diameter must not be considered as an inflexible rod; but in order to insure its perfect action as an axis, it must be supported at proper intervals. Again, the strength and stiffness of the framing which supports the mechanism must be carefully attended to. It should always be recollected, that the addition of superfluous matter to the immoveable parts of a machine is not accompanied with the same evil that arises when the moving parts are increased in weight; since no additional momentum is thus generated.

244. The stiffness of the framing of a machine draws after it another important advantage. If the bearings of the axis (those places at which they are supported) are once placed in a straight line, they will continue so, if the framing be immoveable; whereas, if the framework changes its form, although ever so slightly, considerable friction will immediately arise. This effect is so well understood in the districts in which our spinning factories are numerous, that in estimating the expense of working a new factory, it is allowed that five per cent. on the power of the steam-engine will be saved if the building is fire-proof. This saving arises entirely from the greater strength and rigidity of a fire-proof building preventing the long shafts or axes that drive the machinery from being impeded by the friction which would arise from the slightest deviation in any of the bearings.

245. It is quite a mistaken idea to suppose that any imperfect mechanical work is good enough for a trial. If the experiment is at all worth trying, it ought to be tried with all the advantages of which the state of mechanical art admits; for an imperfect trial may cause an idea to be given up, which better workmanship might have proved to be practicable. On the other hand, when once its success has been established with good workmanship, it will be easy to ascertain that degree of perfection which is necessary for its due action.

It is partly owing to this circumstance, the *imperfections of the original trials*, and partly owing to the gradual improvement in the art of making machinery, that many inventions which have been tried, and have been given up in one state of art, have, at another period, been eminently successful. The idea of printing by means of moveable types had probably suggested itself to the imagination of many men conversant with impressions taken either from blocks or seals. We find amongst the instruments discovered in the remains of Pompeii and Herculaneum, stamps for words formed out of one piece of metal, and including several letters. The idea of separating these letters, and of recombining them into other words, for the purpose of stamping a book, could scarcely have failed to have occurred to many: but it would almost certainly have been rejected by those best versed in the mechanical arts of that time: for any workman of those days would have instantly perceived the impossibility of producing many thousand pieces of wood or metal fitting so perfectly, and ranging so uniformly, as the types or blocks of wood used in the art of printing.

The principle of the press which bears the name of Bramah was known about a century and a half before the machine, to which it gave rise, existed; but the imperfect state of mechanical art in the time of its inventor, would have effectually deterred him, if it had occurred to his mind, from attempting to apply it as an instrument for exerting force in practice.

These considerations prove the propriety of repeating, at the termination of intervals, during which the art of making machinery has undergone any great improvement, the trials of methods which may have previously failed, although they were founded upon just principles.

246. When the drawings have been properly made, and the machine has been well executed, and when the work it produces possesses all the qualities which were anticipated, still the invention may fail; that is, *it may fail of being brought into general practice.* This will most frequently arise from the circumstance of its producing its work at a greater expense than that at which it can be made by other methods.

247. Whenever the new or improved machine is intended to become the basis of a manufacture, it is essentially requisite that the whole expense attending its operations should be fully considered before its construction is undertaken. It is almost always very difficult to make this estimate of the expense; but the more complicated the mechanism, the less easy is the task; and in cases of great complexity and extent of machinery, it is almost impossible. It has been estimated roughly, that the expense of making the first individual of any newly invented machine will cost about five times as much as the construction of the second; an estimate which is, perhaps, sufficiently near the truth. If the second machine is to be precisely like the first, the same drawings and the same patterns will answer for it; but if, as usually happens, some improvements have been suggested by the experience of the first, more or less of these must be altered. When, however, two or three machines have been completed, and many more are wanted, they can usually be produced at much less than one-fifth of the expense of the original invention.

248. The arts of contriving, of drawing, and of executing, do not usually reside in their greatest perfection in one individual; and in this, as in other arts, *the division of labor* must be applied. The best advice which can be offered to a projector of any mechanical invention, is to employ a respectable draughtsman, who, if he has had a large experience in his profession, will assist in finding out whether the contrivance is new, and can then make working drawings of it. The first step, however, the ascertaining whether the contrivance has the merit of novelty, is most important; for it is a maxim equally just in all arts, and in every science, that the man who aspires to fortune or to fame by new discoveries, must be content to examine with care the knowledge of his contemporaries, or to exhaust his efforts in inventing again what he will, most probably, find has been better executed before.

This, nevertheless, is a subject upon which even ingenious men are often singularly negligent. There is, perhaps, no trade or profession existing in which there is so much quackery, so much ignorance of the scientific principles, and of the history of their own art, with respect to its resources and extent, as is to be met with amongst mechanical projectors. The self-constituted engineer, dazzled with the beauty of some, perhaps, really original contrivances, assumes his new profession with as little suspicion that previous instruction, that thought and painful labor, are necessary to its successful exercise, as does the statesman, or the senator. Much of this false confidence arises from the improper estimate which is entertained of the difficulty of invention in mechanics; and it is of great importance, to the individuals, and to the families of those who are thus led away from more suitable pursuits, the dupes of their own ingenuity and of the popular voice, to convince both them and the public that the power of making new mechanical combinations is a possession common to a multitude of minds, and that it by no means requires talents of the highest order. It is still more important that they should be convinced that the great merit and the great success, of those who have attained to eminence in such matters, was almost entirely due to the unremitted perseverance with which they concentrated upon the successful invention the skill and knowledge which years of study had matured.

PROPER CIRCUMSTANCES FOR THE APPLICATION OF MACHINERY.

249. The first object of machinery, and the chief cause of its extensive utility, is the cheap production of the articles to which it is applied. Wherever it is required to produce a great multitude of things, all of exactly the same kind, the proper time has arrived for the construction of tools or machines by which they may be manufactured. If only a few pairs of cotton stockings should be required in a country, or in circumstances in which it is impossible to purchase them, it would be an absurd waste of time, and of capital, to construct a stocking-frame to weave them, when, for a few pence, four steel wires can be procured, by which they may be knit. If, on the other hand, many thousand pairs were wanted, the time employed, and the expense incurred, in constructing a stocking-frame, would be more than repaid by the saving of time in making that large number of stockings. The same principle is applicable to the copying of letters: if only three or four copies are required, the pen and the human hand furnish the cheapest resource; but, if hundreds are called for, lithography may be brought to our assistance; and if hundreds of thousands are wanted, the machinery of a printing establishment is the most economical method of accomplishing the object.

250. There are, however, many cases in which machines or tools must be made, where economical production is not the most important object. Whenever it is required to produce a few articles—parts of machinery, for instance,—which must be executed with the most rigid accuracy or be perfectly alike, it becomes nearly impossible to fulfil this condition, even with the aid of the most skilful hands. In such circumstances, it is necessary to make tools expressly for the purpose, although these tools should, as frequently happens, cost more in constructing than the things they are destined to make.

251. Another instance of the just application of machinery, even at an increased expense, arises where the shortness of time in which the article can be produced has an important influence on its value. In the publication of our daily newspapers, it frequently happens that the debates in the Houses of Parliament are carried on to three and four o'clock in the morning—that is, to within a very few hours of the time for the publication of the newspaper. The speeches must be taken down by reporters, conveyed by them to the establishment of the newspaper, perhaps at the distance of one or two miles, transcribed by them in the office, set up by the compositor, the press corrected, and the papers be printed off and distributed before the public can read them. Some of these journals have a circulation of from five to ten thousand daily. Supposing four thousand to be wanted, and that they could be printed only at the rate of five hundred per hour upon one side of the paper, (which was the greatest number two journeymen and a boy could take off by the old hand-presses,) sixteen hours would be required for printing the complete edition; and the news conveyed to the purchasers of the latest portion of the impression, would be out of date before they could receive it. To obviate this difficulty, it was often necessary to set up the paper in duplicate, and sometimes, when late, in triplicate: but the improvements in the printing machines have been so great, that four thousand copies are now printed on one side in a hour.

252. The establishment of "The Times" newspaper is an example, on a large scale, of a manufactory in which the division of labor, both mental and bodily, is admirably illustrated, and in which also the effect of the domestic economy is well exemplified. It is scarcely imagined, by the thousands who read that paper in various quarters of the globe, what a scene of organized activity the factory presents during the whole night, or what a quantity of talent and mechanical skill is put in action for their amusement and information.* Nearly a hundred persons are employed in this establishment; and, during the session of Parliament, at least twelve reporters are constantly attending the Houses of Commons and Lords; each in his turn, after about an hour's work, retiring, to translate into ordinary writing the speech he has just heard and noted in short-hand. In the mean time fifty compositors are constantly at work, some of whom have already set up the beginning, whilst others are committing to type the yet undried manuscript of the continuation of a speech, whose middle portion is travelling to the office in the pocket of the hasty reporter, and whose eloquent conclusion is, perhaps, at that very moment, making the walls of St. Stephen's vibrate with the applause of its hearers. These congregated types, as fast as they are composed, are passed in portions to other hands; till at last the scattered fragments of the debate, forming, when united with the ordinary matter, eight and forty columns, re-appear in regular order on the platform of the printing press. The hand of man is now too slow for the demands of his curiosity, but the power of steam comes to his assistance. Ink is rapidly supplied to the moving types, by the most perfect mechanism: four attendants incessantly introduce the edges of large sheets of white paper to the junction of two great rollers, which seem to devour them with unsated appetite; other rollers convey them to the type already inked, and having brought them into rapid and successive contact, re-deliver them to four other assistants, completely printed by the almost momentary touch. Thus, in one hour, four thousand sheets of paper are printed on one side; and an impression of twelve thousand copies, from above three hundred thousand moveable pieces of metal, is produced for the public in six hours.

253. The conveyance of letters is another case, in which the importance of saving time would allow of great expense in any new machinery for its accomplishment. There is a natural limit to the speed of horses, which even the greatest improvements in the breed, aided by an increased perfection in our roads, can never surpass; and from which, perhaps, we are at present not very remote. When we reflect upon the great expense of time and money which the last refinements of a theory or an art usually require, it is not unreasonable to suppose that the period has arrived in which the substitution of machinery for such purposes ought to be tried.

254. The post-bag, despatched every evening by the mail to one of our largest cities, Bristol, usually weighs less than a hundred pounds.

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* The Author of these pages, with one of his friends, was recently induced to visit this most interesting establishment, after midnight, during the progress of a very important debate. The place was illuminated with gas, and was light as the day: there was neither noise nor bustle: and the visitors were received with such calm and polite attention, that they did not, until afterwards, become sensible of the inconvenience which such intruders, at a moment of the greatest pressure, must occasion, nor reflect that the tranquillity which they admired was the result of intense and regulated occupation. But the effect of such checks in the current of business will appear on recollecting that, as four thousand newspapers are printed off on one side within the hour, every *minute* is attended with a loss of sixty-six impressions. The quarter of an hour, therefore, which the stranger may think it not unreasonable to claim for the gratification of his curiosity, (and to him this time is but a moment,) may cause a failure in the delivery of one thousand copies, and disappoint a proportionate number of expectant readers, in some of our distant towns, to which the morning papers are despatched by the earliest and most rapid conveyances of each day.—This note is inserted with the farther and more general purpose of calling the attention of those, especially foreigners, who are desirous of inspecting our larger manufactories, to the chief cause of the difficulty which frequently attends their introduction. When the establishment is very extensive, and its departments skilfuly arranged, the exclusion of visitors arises, not from any illiberal jealousy, nor, generally, from any desire of concealment, which would in most cases be absurd, but from the substantial inconvenience and loss of time, throughout an entire series of well combined operations, which must be occasioned even by short and casual interruptions.

Now, the first reflection which naturally presents itself is, that, in order to transport these letters a hundred and twenty miles, a coach and apparatus weighing above thirty hundred weight is put in motion, and also conveyed over the same space.*

It is obvious that, amongst the conditions of machinery for accomplishing such an object, it would be desirable to reduce the weight of matter to be conveyed with the letters: it would also be desirable to reduce the velocity of the animal power employed; because the faster a horse is driven, the less weight he can draw. Amongst the variety of contrivances which might be imagined for this purpose, we will mention one, which, although by no means free from objections, fulfils some of the prescribed conditions, and is not a purely theoretical speculation; since some few experiments, though on an extremely limited scale, have been made upon it.

255. Let us imagine a series of high pillars erected at frequent intervals, perhaps every hundred feet, as nearly as possible in a straight line between the two post towns. An iron or steel wire of some thickness must be stretched over proper supports, fixed on each of these pillars, and terminating at the end of every three or five miles, as may be found expedient, in a very strong support, by which it may be stretched. At each of these latter points a man ought to reside, in a small station-house. A narrow cylindrical tin case, to contain the letters, might be suspended by two wheels rolling upon this wire: these might be so constructed as to enable them to pass unimpeded by the fixed supports of the wire. An endless wire of much smaller size must pass over two drums, one at each end. This wire should be supported on rollers, fixed to the supports of the great wire, and at a short distance below it. With this arrangement, there would be the two branches of the smaller wire always accompanying the larger one; and the attendant at either station might, by turning the drum, cause these two branches of the small wire to move with great velocity in opposite directions. In order to convey the cylinder which contains the letters, it would only be necessary to attach it, by a string, or by a catch, to either of the branches of the endless wire. Thus it would be conveyed speedily to the next station, where it would be removed by the attendant to the commencement of the next wire, and thus transmitted on. It is unnecessary to enter into the details which this, or any similar plan, would require. The difficulties are obvious; but if these were overcome, it would present many advantages besides velocity: for if an attendant reside at each station, the additional expense of having two or three deliveries of letters every day, and even of sending expresses at any moment, would be comparatively trifling; and it is not impossible that the stretched wire might itself be available for a species of telegraphic communication yet more rapid.

Perhaps if the steeples of churches, properly selected, were made use of, connecting them by a few intermediate stations with some great central building, as, for instance, with the top of St. Paul's; and if a similar apparatus were placed on the top of each steeple, and a man to work it during the day, it might be possible to diminish the expense of the two-penny post, and make deliveries every half hour over the greater part of the metropolis.

256. The power of steam, however, bids fair almost to rival the velocity of these contrivances; and the fitness of its application to the purposes of conveyance, particularly where great velocity is required, is now beginning to be generally admitted. The following extract from the Report of the Committee of the House of Commons on steam carriages explains clearly its various advantages:

"Perhaps one of the principal advantages resulting from the use of steam will be that it may be employed as cheaply at a quick as at a slow rate; 'this is one of the advantages over horse labor, which becomes more and more expensive as the speed is increased. There is every reason to expect that, in the end, the rate of travelling by steam will be much quicker than the utmost speed of travelling by horses; in short, the safety to travellers will become the limit to speed.' In horse draught the opposite result takes place: in 'all cases horses lose power of draught in a much greater proportion than they gain speed, and hence the work they do becomes more expensive as they go quicker.'

"Without increase of cost, then, we shall obtain a power which will insure a rapidity of internal communication far beyond the utmost speed of horses in draught; and although the performance of these carriages may not have hitherto attained this point, when once it has been established, that at equal speed we can use steam more cheaply in draught than horses, we may fairly anticipate that every day's increased experience in the management of the engines will induce greater skill, greater confidence, and greater speed.

"The cheapness of the conveyance will probably be for some time a secondary consideration. If, at present, it can be used as cheaply as horse power, the competition with the former modes of conveyance will first take place as to speed. When once the superiority of steam carriages shall have been fully established, competition will induce economy in the cost of working them. The evidence, however, of Mr. Macneill, showing the greater efficiency, with diminished expenditure of fuel, by locomotive engines on railways, convinces the committee that experience will soon teach a better construction of the engines, and a less costly mode of generating the requisite supply of steam.

"Nor are the advantages of steam power confined to the greater velocity attained, or to its greater cheapness than horse draught. In the latter, danger is increased, in as large a proportion as expense, by greater speed. In steam power, on the contrary, 'there is no danger of being run away with, and that of being overturned is greatly diminished. It is difficult to control four such horses as can draw a heavy carriage ten miles per hour, in case they are frightened, or choose to run away; and for quick travelling, they must be kept in that state of courage that they are always inclined for running away, particularly down hills, and at sharp turns of the road. In steam, however, there is little corresponding danger, being perfectly controllable, and capable of exerting its power in reverse in going down hills.' Every witness examined has given the fullest and most satisfactory evidence of the perfect control which the conductor has over the movement of the carriage. With the slightest exertion it can be stopped or turned, under circumstances where horses would be totally unmanageable."

257. Another instance may be mentioned in which the object to be obtained is so important, that although it might be rarely wanted, yet machinery for that purpose would justify considerable expense. A vessel to contain men, and to be navigated at some distance below the surface of the sea, would in many circumstances be almost invaluable. Such a vessel, evidently, could not be propelled by any engine requiring the aid of fire. If, however, by condensing air into a liquid, and carrying it in that state, a propelling power could be procured sufficient for moving the vessel through a considerable space, the expense would scarcely render its occasional employment impossible.*

The Population of the United States.—The Boston Journal has some interesting suggestions on this subject, derived from the last Quarterly Register.

The greatest population to a square mile is in the District of Columbia, where it is 393; in Connecticut, 63; in Rhode Island, 72; Massachusetts, 81; Maryland and New-Jersey, 40; Ohio, 24; New-York, 41; Pennsylvania, 30.

The population of New-York in 1840, it is supposed, will be 2,500,000, or 200,000 more than that of all New-England, and about equal to that of all the North-Western Territories. That of Pennsylvania is rated at 1,700,000; of Ohio, 1,300,000. That of Virginia is put at a few thousand more. And thus the oldest settled of the States, which in 1790 had a population of 747,000, will have been overtaken by a State which had no government of any kind until one year before that date, did not become a State until 1802, and had in 1790 a population of only 3000. Indeed, Ohio has the resources within itself for growing into the greatest State of the Union. It can support, without difficulty, a people as dense as that of Holland.

Ohio contains but 39,000 square miles, while Virginia contains 64,000, which is within 1000 of the whole area of New-England, and makes Virginia the largest as well as the oldest State. The next in order is Georgia 62,000, and Missouri 60,000. Illinois contains 55,000, Florida 50,000, New-York 46,000, Pennsylvania 44,000, N'th Carolina and Louisiana 48,000 each. Delaware contains 5100, and Rhode Island 1350.

The most rapid increase of population we observe is in the case of Ohio, which increased from 3000 to 45,000 in ten years, and in the next ten to 230,000. This last was at the rate of 409 per cent. in ten years, whereas the average rate of the whole Union for the last 10 has been but 33 per cent. and that of New-England but a little less than 19. That of New-York was never greater than 72; of Maine, 58; Illinois, 350; Indiana, 500; Michigan, 764; Arkansas, 1344. The most rapid increase has, of course, been in the early settlements.

The population of the United States in 1480 is rated at 17 millions. What it will be a hundred years hence, it is not easy to calculate. What it *may* be, however, is inferible from the fact that our territory is immensely extensive; that a vast amount of rich land is yet unoccupied; that lands now cultivated may be made vastly more productive; that a large portion of our country is under tropical climates; and that if the whole country should support but 230 inhabitants to a square mile, as England now does, we should have, as the editor of the Register observes, more than 450,000,000!!

Gardens and Honey at Syracuse.—The following is an extract of a letter from an American gentleman in Sicily, published in the Journal of Commerce:

"We next entered the Marquis of Casal's garden. It contains several acres, but it is subterranean, like that of the genii in the tale of Aladdin. It is an excavation, and the smooth rocky walls rise around it, between 100 and 200 feet high. The oranges, citrons, and lemons, are the largest in Sicily: they are delicious, and there is a great variety of flowering plants. The imagination can hardly conceive a more delightful place. Another similar garden is attached to the Capuchim Convent. The walls were shaped into form with vast labor, and some pillars of rock were left standing in the middle. There are many caverns, but the open spaces are cultivated as a garden. The approach is over a large rock, when you come suddenly upon a garden yellow with golden fruits, sunk deep in the earth. On a shelf in the rock are fifty swarms of bees, that gather a honey little less fragrant than that of Hybla. Let me tell you in a parenthesis, lest I forget it elsewhere, that I have been to Hybla itself, where I obtained a hundred pounds of that honey, so renowned in poetry. It is above all honey in taste, and it has the fragrance of flowers. You shall taste it, for there is no more to be had at Hybla. Strange it is that while Sicily has had so many different populations, the Greek, the Roman, the Saracen, the Norman, and a mixture of them all, that, if the ancient dead could revive, they would hardly know their country: yet the same bees continue to make the same honey, and have the same flowers that were gathered by Proserpine, or sung by Theocritus."

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* It is true that the transport of letters is not the only object which this apparatus answers; but the transport of passengers which is a secondary object, does, in fact, put a limit to the velocity of that of letters, which is the primary one.

* A proposal for such a vessel, and description of its construction, may be found in the Encyclopædia Metropolitana, art. "Diving Bell."

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LITERARY NOTICES.

On the Adaptation of External Nature to the Moral and Intellectual Constitution of Man; by Rev. T. Chalmers, D.D.; 1 vol.: *Philad*, Carey, Lea & Blanchard.—Though third in the order of publication, this is the first in the order of division of the eight treatises written for the Bridgewater legacy of £8000 stg. It is, as all that Dr. Chalmers writes, unquestionably able and ingenious; but frequently obscure, and harsh and negligent in style. It too, taken in connection with the two previous treatises heretofore noticed in these columns, serves to confirm our first impression of regret, that the able and well considered legacy had not been given undivided to some one individual. Such a man, with capacity and instruction enough to embrace the whole subject—"the Power, Wisdom and Goodness of God as manifested in the Creation"—and to illustrate it, as desired, by arguments derived from the animal, mineral and vegetable kingdoms, from the construction and functions of man, and from every department of art, science and literature, could surely have been found; and if not, so magnificent a bequest would well repay the study and application of half a life devoted to the acquisition of the requisite knowledge. We should then have been presented with a homogeneous treatise, where, though each distinct topic were separately treated, there would be a constant and natural support derived from one to the other, and all combining harmoniously to proclaim and prove the great truths it is intended to illustrate. Now we have disjointed treatises, in which the aid that one branch of the eight into which the subject has been arbitrarily divided, might afford another, is scarcely availed of—for fear of touching on another's ground—or, if availed of at all, slightingly and often most unsatisfactorily. Another objection to this parcelling out of the subject is, that the bulk of the treatises will be so increased as by their extent alone to deter many persons from reading them. These objections, however, are now unavailing. We must take the treatises as they are; and thus far, it is to be said with all truth, that they are executed with ability and a due sense of the importance of their object.

We make a single extract from this volume, which combines, we think, the peculiarities of Dr. Chalmers's style, with his accustomed force of reasoning:

> The chief then, or at least the usual subject-matter of the argument for the wisdom and goodness of God, is the obvious adaptation wherewith creation teems, throughout all its borders, of means to a beneficial end. And it is manifest that the argument grows in strength with the number and complexity of these means. The greater the number of independent circumstances which must meet together for the production of a useful result—then, in the actual fact of their concurrence, is there less of probability for its being the effect of chance, and more of evidence for its being the effect of design. A beneficent combination of three independent elements is not so impressive or so strong an argument for a divinity, as a similar combination of six or ten such elements.—And every mathematician, conversant in the doctrine of probabilities, knows how with every addition to the number of these elements, the argument grows in force and intensity, with a rapid and multiple augmentation—till at length, in some of the more intricate and manifold conjunctions, those more particularly having an organic character and structure, could we but trace them to an historical commencement, we should find on the principles of computation alone, that the argument against their being fortuitous products, and for their being the products of a scheming and skilful artificer, was altogether overpowering.
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> We might apply this consideration to various departments in nature. In astronomy, the independent elements seem but few and simple, which must meet together for the composition of a planetarium. One uniform law of gravitation, with a force of projection impressed by one impulse on each of the bodies, could suffice to account for the revolutions of the planets round the sun, and of the satelites around their primaries, along with the diurnal revolution of each, and the varying inclinations of the axes to the planes of their respective orbits. Out of such few contingencies, the actual orrery of the heavens has been framed. But in anatomy, to fetch the opposite illustration from another science, what a complex and crowded combination of individual elements must first be effected, ere we obtain the composition of an eye,—for the completion of which mechanism, there must not only be a greater number of separate laws, as of refraction and muscular action and secretion; but a vastly greater number of separate and distinct parts, as the lenses, and the retina, and the optic nerve, and the eye-lid and eye lashes, and the various muscles wherewith this delicate organ is so curiously beset, and each of which is indispensable to its perfection, or to the right performance of its functions. It is passing marvelous that we should have more intense evidence for a God in the construction of an eye, than in the construction of the mighty planetarium—or that, within less than the compass of a hairbreadth, we should find in this lower world a more pregnant and legible inscription of the Divinity, than can be gathered from a broad and magnificent survey of the skies, lighted up though they be, with the glories and the wonders of astronomy.

Commentaries suited to Occasions of Ordination; by Bishop White, of Pennsylvania. New York, *Swords, Stanford & Co.*—This new edition of a work that has become a standard in the American Episcopal Church, is prepared at the express request of all his brother bishops, by the venerable and reverend prelate, who, serving in the armies of Independence as a chaplain, has lived to see his beloved country, as well as the church, of which he is by age the honored head, reach their present palmy state. The work is well printed, with a fine engraving prefixed of Bishop White; and will doubtless be acceptable to the numerous ministers and members of the Episcopal communion.

The Communicant's Manual, &c. taken from the Manual for the Altar; by the late Bishop Hobart. New York, *Swords, Stanford & Co.*—A neat little pocket volume, adapted, like that noticed above, to the special use of Episcopalians.

The Spirit of Prayer; by Hannah More: with Prayers and Meditations for each Day in the Week. N. York, *Swords, Stanford & Co.*—From a dying bed, *Hannah More*, in this little volume, seeks to crown the good effected in a long life of active benevolence and piety, by presenting in a striking view, the necessity and the consolations of prayer, and exemplifying the spirit in which it should be resorted to.

Polynesian Researches, Vol. II; by Wm. Ellis. New York, J. & J. Harper.—There are no volumes of recent publication better got up, mechanically speaking, than these; or which, by their contents, are more interesting. On the appearance of the first volume. we took occasion to express this opinion at more length; and we see additional confirmation of it in that now before us.

German Parables, by Krummacher: *New York*, Peabody & Co.—These parables are renowned in Germany, and they seem to us well rendered into our language, and calculated to improve as well as amuse.

The Modern Cymon, from the Jean of Paul de Kock; 2 vols.: *Philadelphia*, Carey, Lea & Blanchard.—The humor of this French novel of middle life seems to us to have evaporated in the translation. while much of its coarseness and—we must even say it—its vulgarity is retained. It furnishes however, we presume, a faithful portraiture of living manners, and thence its chief interest.

Sketches of Turkey in 1831 and 1832, by an American. 1 vol. 8vo. pp. 500. *New York*: J. & J. Harper.—Though given to the world without a name, it seems to be understood that *Dr. James E. Dekay*, of this city, is the author of these Sketches. We are quite safe, we think, in saying, that if the name were originally withheld from doubts as to the value, or the reception of the book, they will be effectually dissipated; for we have rarely seen a work better calculated to arrest and repay attention, or more marked by sound judgment, careful observation, and an independent tone of thought, in the selection and discussion of the various topics which it embraces. The Turks as a people are manifestly favorites with the author—though he does not on that account overlook or underrate their deficiencies. On the other hand, he omits no opportunity of expressing his contempt for the Greeks, and treats our American enthusiasm in favor of these "descendants of Themistocles" as schoolboy raphsodies, or at least as the offspring of schoolboy recollections. We will not contest this point with him—content, as we always are, in this "bank note age," to find enthusiasm on any subject unconnected with self. This book will dissipate many popular errors in regard to the habits and manners of the Turks. Foremost among these is the universally received opinion, that they are great chewers of opium, and that a special part of the city is assigned to coffeehouses, where the opium-eaters go to indulge their propensity. This our author positively contradicts, never having seen in Constantinople, he says, himself, but one individual, and that was a Jew, under the influence of this drug. If it ever was a national vice, he adds, it has wholly disappeared. Another common opinion is, that in Turkey the women are all closely secluded. Yet see what an eye witness tells us:

> Every person who has been in Turkey, and is not afraid of speaking out his real sentiments, instead of timidly acquiescing in the loose reports of ignorant or prejudiced travellers who have preceded him, will agree with us when we state that women in Turkey actually enjoy more liberty than in the other countries of Europe or in America. We do not speak of the higher classes, for we know nothing about them, although our opportunities have been equal to those of most of our predecessors, and in many cases superior. We allude to the middling classes, by which alone every country is to be judged, if judged fairly or correctly. No stronger proof of the liberty they enjoy is necessary than the numerous parties of ladies which one meets with in the environs of Constantinople, which excursions, from their frequency, appear to form almost the sole business of their lives. It is in fact a pleasant way of passing time, and resembles our own practice, except that it differs in its details. Instead of a formal card from Mrs. White to Mrs. Green and the Misses Green, the Turkish lady sends her servant to a friend, and asks her company to ride out to Belgrade, or to an excursion on the Bosphorus. Instead of being bored to death like Mrs. White, who hopes half her dear friends will stay away, and between the grumbling of husband and remissness of servants, is in a feverish flutter for a week or fortnight, the Turkish lady manages the affair in a different manner. The fair Fatimah orders provisions to be put up for a day's excursion, and leaving enough for her complaisant husband, steps into her *caik and calls upon her friend the lady Zaylilah. From thence the party proceed up the Golden Horn, or, breasting the Bosphorus, select some lovely valley bordering upon that "ocean stream." Here the friends spend the day surrounded by their household, and continuing their customary avocations, while the young people are sporting under the shade of the lofty trees, and the party return home in the evening in high spirits, and with their health improved by exercise in the open air. It may be doubted whether our young women are equally benefitted by spending an evening in a heated and crowded room, and vitiated atmosphere; but we fear the comparison may be thought Gothic.
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> In Constantinople, and the same may be said of all Turkey, the women occupy the markets, and fill the streets, and barricade the bazars. Availing themselves of the general respect paid to their sex, they elbow their way through a crowd, regardless of whom they may derange in their way; and the domestics do not scruple to act upon the principle of "peaceably if we can, forcibly if we must." It has more than once been our lot, in a crowded bazar, to receive a substantial punch in the side, and upon turning round, discover that the uncourteous se-

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* A light boat.

lutation proceeded from the fair hand of some Turkish servant woman, whose path we had unconsciously impeded. They never address a stranger, nor reply to a casual observation. In perambulating the bazars with two American children, I have been, however, frequently accosted by the Turkish women, and their inquiries and observations were made with the most perfect freedom and simplicity. These facts are mentioned to show the unrestrained liberty enjoyed by the Turkish women; and we are assured, by persons whose long residence and perfect familiarity with many Turkish families here entitle them to full credit, that the class of discreet and sensible husbands maliciously termed henpecked is as numerous in Turkey as in any other part of the globe.

For truth, honesty and fidelity, the Turk has, on the showing of this writer, no superior; and urbanity of deportment, even towards Christian dogs, he never found wanting. On the contrary, he cites various instances where, among the soldiers as well as the people, he met with the most obliging treatment.—There is to be sure among them a great indifference to human life—but not more, we apprehend, than in Spain or Italy—whilst their kindness to the brute creation is proverbial. Take for example these instances:

> I have, however, already had opportunities of witnessing the kindness universally manifested by the Turks towards the brute creation. It is not an uncommon thing to see open boats in the Golden Horn loaded with grain, and literally covered with flocks of ringdoves feeding undisturbed. Besides these water-birds, there are others, which are constantly on the wing, and hence termed by the Turks *Yengwan*, which the Franks have translated into "ames damnées," in allusion to their perpetual restlessness. [A species of Pediceps.]
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> There is one little circumstance connected with these tombstones which displays an amiable trait of character. On the upper corner of each stone are two small cavities, which are usually filled with water. The intention of this is to supply a drink to the thirsty birds, and indeed to invite them to take up their residence in the neighborhood, and by their song to give additional cheerfulness to the spot. It is not, however, exclusively an Armenian practice, for the Turks and other orientals have the same custom.

Turkish ignorance, or rather unskilfulness in mechanics, is quite extraordinary. "I do not think," says our traveller, (p. 163) "I ever saw a straight wall, a level floor, or a true perpendicular, in any house during my residence in Turkey." Yet with all this, they construct works both ingenious and gigantic. That described in the annexed extract,—as a means of passing water over a deep ravine, without incurring the expense of a vast aqueduct, and in the absence of pipes, (which they have not the skill to make,) capable of sustaining the pressure of a great head of water—is very striking.

> Where a valley of great extent is to be crossed, the Turks have resorted to an ingenious contrivance, which I have nowhere seen clearly described, but which, from its simplicity and value, merits a more particular notice. From the want of sufficient mechanical skill to manufacture water-pipes strong enough to bear the weight of a large column of water, they adopted the following plan: In the direction of the proposed water-channel, a number of square pillars are erected at certain short intervals. They are about five feet square, constructed of stone, and, slightly resembling pyramids, taper to the summit.. They vary in height, according to the necessities of the case, from ten to fifty feet, and in some instances are even higher.
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> They form a striking peculiarity in Turkish scenery, and it was some time before the principle upon which they were constructed was apparent. The water leaves the brow of a hill, and descending in earthern pipes rises in leaden or eathern ones, up one side of this pillar, to its former level, which must be, of course, the summit of the pillar, or *sooteray*, as it is called by the Turks.* The water is here discharged into a stone basin as large as the top of the sooteray, and is discharged by another pipe, which descends along the opposite side of the pillar, enters the ground, advances to the next sooteray, which it ascends and descends in the same manner; and in this way the level of the water may be preserved for many miles over large ravines or plains, where an acqueduct would be, from its expensiveness, manifestly out of the question. In the city of Constantinople, the old ruinous acqueduct of Valens, which no longer conducts water in the usual manner, is converted into a series of sooterays, and permits one to examine their structure in detail. The stone basin on the summit is covered with an iron plate, to prevent the birds from injuring the water. This is connected by a hinge, and, upon lifting it up, the basin is found to be divided into two parts by a stone partition. Several holes are made in this partition near its upper edge. The water from the ascending pipe is allowed by this means to settle its foreign impunities, and the surface water, which is of course the most pure, flows through these apertures into the adjoining compartment, from whence it descends, and is carried to the next sooteray, where the same process is repeated. A number of projecting stones on the side facilitate the ascent of the person who has the charge of these sooterays, and whose business it is to remove the deposits from the water in the stone basins.
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> This ingenious hydraulic arrangement seems to possess advantages which might recommend its adoption elsewhere. As the pressure is thus divided among this series of syphons, the necessity for having very strong and costly pipes is obviated. As they are from three to five hundred yards apart, the cost is probably much less than by any plan which could be devised, where, in addition to the cost of a canal or series of pipes, we should be compelled to raise it again by the expensive agency of steam or some other costly apparatus. The frequent exposure of the water to air and light at the summit of these sooterays is another very important advantage which cannot be too strongly insisted upon; as it is now well known that nothing tends more to purify water than the presence of these two agents. The arrangement likewise of the basins on the top of the pillars is well adapted for getting rid of much of the matters deposited from turbid waters. Lastly, to the descending pipe a small cock is attached near the ground, by which the flocks and herds of the adjoining villages and fields are furnished at all times with a copious supply of water.
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> On the heights of Pera there is a large reservoir, 200 feet square, built of the most solid and substantial masonry; from this reservoir the water is distributed through the suburbs of Fundukli, Pera, Galata, and Cassim Pacha.

After a deliberate survey of the various hydraulic contrivances for supplying Constantinople with water, one is at a loss to know which to admire most, the native good sense which pointed out the necessity and importance of furnishing the capital and its suburbs with pure and wholesome water, the ingenuity displayed in conquering almost invincible obstacles, or that wise and liberal economy which considered no expense too enormous, no sacrifice too great in comparison with the health and comfort of the people. The various water-courses about Constantinople must exceed fifty miles in length, and the expenses of the various reservoirs and aqueducts could not have been less than fifty millions of dollars. With a single remark we shall conclude our remarks on this subject. The city of New York, with a population of more than 200,000 inhabitants, has been deliberating for years over the question—whether it is expedient to spend two millions of dollars for the purpose of introducing a copious supply of pure and wholesome water.

The numerous and expensive expedients adopted of insuring a supply of water to Constantinople, are indeed worthy of all admiration, and at a humble distance, of all imitation in New York. It will surprize our readers, we apprehend—it certainly did us—to learn that there are 1200 primary public schools in Constantinople, in which reading and writing are taught, and the Koran is read and explained. From the fact that in those schools visited by him no girls were present, our author drew the conclusion that reading and writing are not in Turkey deemed indispensable to females.

Much information that cannot be otherwise than useful, is collected in the chapter which treats of the commerce of the Black Sea. The advantages that Americans may derive from it are thus set forth:

> The Austrians are and will continue to be our most active rivals. An American is surprized upon entering the Mediterranean to find that a flag unknown to him is flying at the masthead of almost every third vessel he may happen to fall in with. He is told it is the Austrian flag; and the key to the wonder is the extent of her Italian possessions. Under her flag the ancient enterprise of Venice has received new life, and her canvass whitens every sea. The carrying-trade is chiefly in their hands, and is considered as exceedingly profitable. They have been on thorns ever since our treaty has been in agitation, as they seemed to anticipate that American vessels would monopolize the whole business. Although the cost of navigating an Austrian vessel is less than one of our own, yet this would, we apprehend, be more than counterbalanced by our superior sailing and quicker despatch. The Austrian vessels are usually polacre brigs of 150 to 400 tons. Desirous of informing myself personally of the advantages which they are supposed to possess over our own ships, I visited one which had recently been built at Trieste, and said to be the finest that had ever been launched from that port. She was of the burthen of 400 tons, had cost when complete $20,000, was navigated by eighteen men. In the summer months she only requires sixteen men. Their wages vary from $8 to $10 per month, and her annual insurance is $1000. The men are furnished with excellent provisions, and the captain informed me that he could get no sailors, unless he furnished them with as good food as he required for himself. This vessel makes two voyages annually between Odessa and Trieste, which is considered about the average, although three and even four have been made; but this is acknowledged to be of very rare occurrence. Much of the length of these voyages must depend on the facilities afforded for making up a cargo, but we have been informed by competent authority, that even allowing for the unavoidable delays at the Dardanelles and Bosphorus, forty days would be an ample allowance for the passage between Trieste and Odessa. This would give four complete voyages, but as the Austrians commonly make but two, each trip must consume more than ninety days. Our own vessels, we are inclined to believe, taking the whole year round, would make a complete voyage every two months, provided there was no unusual detention on account of the cargo. From these facts our ship-owners may judge for themselves of the rivalry to be anticipated from Austrian vessels.

Whether however, after reading the annexed passage, our thorough political economists will think the Doctor a sound judge in matters of commercial intercourse, we somewhat doubt; yet his facts are facts "for a' that."

We do not profess to be versed in the metaphysics of commerce, and indeed have given up the idea of ever being made to comprehend its intricacies, when we were instructed that it was far more beneficial to pay a foreigner six cents for an article, than to purchase it from a neighbor and fellow citizen at the same price, or who will take something from us which will be an equivalent. The advocates for free-trade will find a beautiful example of its operation in Turkey. The duties, as we have said are almost nominal; and, as a consequence, domestic industry is at a stand. England furnishes them with cloths, rat-traps and penknives; France with caps, confectionaries, and shoes; while Russia obligingly furnishes them with bread.

THE LAST MAN; BY MRS. PERCY BYSHE SHELLEY. 2 vols. Philadelphia, CAREY, LEA & BLANCHARD.—'The Modern Prometheus,' by the same female hand,—strange, that a female should have such a taste as this and the former work indicate!—will prepare all readers for the tales of horror, desolation, and wo, wrought up with considerable talent, which this work presents. It is the history of the earth depopulated by a pestilence, and leaving only a single survivor. It is quite as horrible as can be desired.

ORAN THE OUTCAST; OR A SEASON IN NEW YORK. 2 vols. PEABODY & Co.—These volumes purport to be a description of a portion of society in New York, which "arrogates to itself the title of 'good.'" We do not know any portion of society which does "arrogate" this title; nor, if that occasionally, and by no means skilfully, touched in these pages, be that portion, have we any great curiosity to know it. There is, however, little space comparatively devoted to this topic, the work being made up principally of a series of most improbable adventures and incidents. There is some talent displayed in the style, and a respect for sound principles inculcated in the sentiments of the writer; but as a picture of New York society of any sort, or at any time—the book is a failure.

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* This word is from the Turkish *sooterayeoo*, which means the levelling of the water, and expresses very well the object of the sooteray.

TRANSATLANTIC SKETCHES, COMPRISING SCENES IN NORTH AND SOUTH AMERICA AND THE WEST INDIES, by Captain J. E. ALEXANDER, *Philadelphia*, KEY & BIDDLE.—The author of this thick royal octavo has certainly shown himself a very active, industrious personage to travel through a hemisphere and write such a book in a *twelvemonth*. His researches, as may be readily believed, are not very deep; but he is a good-humored, rattling, cosmopolit*ish* character, who whisks over half our little planet as unceremoniously as if, instead of voyageing among nations, states and empires, he were taking an afternoon trot on the Third avenue.

We have marked a few extracts relating to that inexhaustible subject, about which, in what Captain Hamilton calls our greedy and inexhaustible national vanity, Americans never tire of hearing—ourselves. The first relates to our army, a post of which near New Orleans, was visited by Capt. Alexander:

> The officers were very sensible and gentlemanly, but their manner was more reserved than is usual among our people; and though we were near a scene of (to them) great exultation, the defeat of some thousands of our Peninsular heroes by entrenched American riflemen, yet they made not the slightest allusion to it; and there was no vain boasting on their part, but a delicate reserve, when I introduced the subject, and expressed a wish to visit the unfortunate field
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> . The uniform of the officers and men was a blue coatee with white buttons, lace on the cuff and collar, and wings on the shoulders; *the men on duty were not particularly well set up, but the Americans in general have a lounging air about them.* The barrack-rooms were clean, and the kits neatly arranged; but I was surprized to see that, in the hot climate of Louisiana, the American soldiers slept two in a bed. Their bed-stands were wooden frames, which could easily be taken to pieces, and had upper and lower berths. There are no iron bedsteads yet in the States, and consequently their men are far from being so comfortable as ours in this respect. In the barrack-square I observed the punishment of hard labor with a clog and chain attached to the foot of the culprit; and I understand that flogging and solitary confinement was often resorted to, though free and independent American soldiers being flogged seemed rather strange, *but there are few genuine Americans in the army.*

Speaking elsewhere of the army, the Captain comments upon the inadequate pay of non-commissioned officers, on whom he insists the efficiency of a corps chiefly depends.

Speaking of the backwoods, he says:

> Let the youth who is full of himself, who is conceited with the flattery of female friends, uplifted in his own estimation, make a tour in the backwoods of America, it will soon cure him of his empty pretensions. Affectation is unknown there, and he will soon acquire a natural manner of acting and thinking.

FOREIGN INTELLIGENCE.

LATER STILL.—The Napoleon arrived yesterday afternoon from Liverpool. We have our regular London files to 25th ult. inclusive.

The Portuguese question is the main one now.—Bourmont, it would seem, was bent upon making an attempt to regain Lisbon. He had been sending off his troops by detachments in the direction of Coimbra several days, before he fairly raised the siege of Oporto, and in that way had evidently stolen a march upon his opponents. His force, after the junction affected with Mallellos and the Duke of Cadaval, would exceed considerably in numbers any that Villa Flor (the Duke of Terceira) could oppose to him.—Donna Maria had not been officially recognized by either France or England. The former hesitated, it is said, until it could obtain the promise of commercial immunities in Portugal equal to those of England;—the latter because of the distrust—entertained in a special degree by the Lord Chancellor—of Don Pedro. Lord Wm. Russell was, however, acting avowedly at Lisbon in concert with Don Pedro and the Marquis Palmella, Don Pedro having openly assumed the Regency in the name of his daughter, and thus revoked the commission previously given to the Duke of Palmella.

The Paris papers view this as disgracing M. Palmella.

In France all seemed quiet. The imprisoned Ministers of Charles X. were, it was said, about to be transferred from Ham to Blaye, the recent place of detention of the Duchess of Berri. King Philip was about visiting the sea coast, and at Dieppe was to give a succession of naval and other fetes.

The existence of a treaty between Russia and Turkey was admitted by Lord Palmerston in the House of Commons in reply to some question put to him; but of its nature, he was, he said, wholly uninformed. We refer our readers to the report of what took place on that occasion.

The first session of the first Reformed British Parliament would, it was understood, be closed by the King in person on Thursday 29th August. It has been a very long, and certainly an important one—though we infer from the tenor of the papers, by no means satisfactory on the whole to the nation. Three important acts, however, it had passed: that for the emancipation of slaves in the colonies; that renewing the charter of the Bank, and that renewing, with most essential modifications, the East India Company's charter. So completely were the members tired out by the length of the session, or so completely did the love of grouse shooting (which commences on the 12th of August) prevail over the sense of legislative obligation, that the most prominent measures were, according to the Spectator, decided by "about forty Peers, and about twice as many Commoners."

So flagrant was this abuse, that during the discussion of an important clause in the Bank charter bill, Sir John Wrottesley took occasion to make the following remarks respecting the small attendance of members in the House:

> That clause was so important, that he was impressed with a feeling of awe upon it, seeing the state in which the House then was. That Parliament had been elected under the impression that *all monopolies should cease. By looking at the public papers, he found that* 300 *out of the* 658 *members were pledged at the hustings to vote for the repeal of all monopolies, more particularly the Bank and East India; yet now, when they were discussing one of the most important of all, there were not above fifty members present.*

The clause passed by a majority of 49 to 16!

Spain seems to be again in suspense by reason of the renewed illness of the King. It is now rumored that Zea Bermudez, who has complete ascendancy in the ministry, is playing into the hands of Don Carlos, and that the pretensions of that prince in opposition to those of the Infanta will, in the event of the King's death, be sustained by that minister.

We understand that it is decided that Queen Donna Maria is to embark at Havre, where Admiral Napier, in the John IV., will come to receive her. She is to leave Paris on Monday next, and orders have been already sent to Havre to prepare lodgings for forty persons, of whom her suite will consist. Her Majesty will be accompanied by the Duchess of Barganza and the Marquis of Loule. It is also said that a French Minister Plenipotentiary will go with the young Queen, who will be formally acknowledged by the French Government immediately upon her arrival at Lisbon. Rumours are abroad of the disgrace of the Marquis of Palmella, which it is said, are confirmed by a courier from Spain.

[*From Galignani's Messenger.*]

"A report" says the *Courrier Francais*, "is current that the projected marriage between the Duke de Nemours and Donna Maria will not take place, because the Queen has openly declared her attachment for Duke Eugene de Leuchtemberg, brother of her august mother-in-law, and that he alone shall be her husband. The Duke de Leuchtemberg is the son of Eugene Beauharnois, his sister is the wife of Don Pedro.

The *Moniteur Algerien* has the following paragraph:—

"News has just been received here of the taking of the towns of Monstaganem, by the troops from the division of Oran. We are not yet acquainted with the details of this brilliant affair, in which the marine had a great share.'

CONSTANTINOPLE, JULY 25.—What was some time ago a mere report is now an undoubted fact. The Porte has concluded an offensive and defensive alliance with Russia, which is still kept secret, and of the contents of which only so much has transpired, that Russia engages to afford every assistance asked for by the Porte, and that the latter engages, in case Russia should be at war with any power whatever, to treat that power as an enemy; farther, that Russia renounces the payment of the expenses of the late expedition, estimated at ten millions of rubles, and that the duration of the treaty is fixed for eight years; that this treaty is as advantageous to the Porte, as it greatly strengthens the power of Russia, admits of of no doubt. In particular nothing can be better adapted to defeat the ambitious plans of Mehemet Ali, should he entertain any such, as has been conjectured.

The Porte issued a few days ago a new coinage, the real value of which is much greater in proportion to the nominal value than all the coin of the same description before issued. It is difficult to imagine how this it possible in the dilapidated state of the Turkish finances; but perhaps report has exagerated on this point.

The capital enjoys profound tranquility, and trade and commerce seem to revive.

The accounts from Greece are favorable.—[Allgemeine Zeitung, Aug. 16.]

The *National*, after some observations on the importance of an offensive and defensive alliance between Russia and Turkey in pursuance of which the latter Power would be compelled to close its ports against any nation with which the former may go to war, argues that the only remedy for the evil is for France to form an equally close alliance with Egypt, which it strongly advises being at once done, if, indeed, it be not already too late, and if the success Mehemet Ali has obtained, without the assistance of France, do not induce him to consider her friendship as now useless to him.

[*From the Athenæum.*]

Letters have been received from Richard Lander, dated 8th May, from Fernando Po, where he had been obliged to go for the recovery of his health.—He had been seriously ill, but was so far recovered, that he intended to return in the Albert man-of-war, in a day or two, to the brig at the mouth of the Niger, where it had been arranged that the steamboats from the interior should meet him. The steamboats had been detained up the river for want of water.

Colonel Nicholls, the Governor of Fernando Po, had kindly furnished him with a supply of wine and medicines for the invalids. Lander expected to be in England in September or October.

During the first month, not less than twenty deaths occurred among the persons composing the expedition: in the second, five. Of the officers only three remained alive, namely, Messrs. Lard and Lander and Lieutenant Allen.

LONDON, AUG. 24.—We have received the French papers of Wednesday, 22d, with a letter from our correspondent of the same date.

PARIS, AUG. 21.

The approaching birth-day of the Duke of Bordeaux, on which, according to the ancient usages relative to the King of France, he will attain his majority, is, it appears, to be a grand day for the legitimatists; all the young heroes of the party, except those who are with Gen. Bourmont, are to make a pilgrimage to Prague, to pay their homage to their Sovereign; but as they apprehended that the police may not approve of so formidable an army marching through the country, they are to go in separate detachments of twos and threes, and only show themselves in their might after their arrival at Prague.—One little circumstance is a serious annoyance to them. The Marquis de Pasteret, who still considers himself Chancellor of France *de jure*, was to have headed the party at Prague, and drawn up an official act of the majority, oath of allegiance, &c. but it appears that the Noble Marquis has been refused a passport, and must either go by stealth or not at all.

All the absolutists are highly indignant at the publication of the Portuguese intercepted letters.

The Roman Catholic priesthood in India exceeds in number the ministers of the Protestant Church, in the proportion of about 300 to 1; and the population of each persuasion differs in an equal ratio.

The Lord Chancellor is much opposed to general abolition of *sinecures*, which would do away with the appointment he holds as *keeper of the King's conscience.*—[Figaro in London.]

Tremendous Fall of Limestone-cliff at Marcross.—On Thursday, the 24th of July, an immense avalanche of the lofty cliff at Marcross, in this county, took place, and it is calculated that 200,000 tons of limestone rock were precipitated upon the beach. It has unfortunately occurred very near one of the newly-erected light-houses, and though there is no immediate danger, yet, when what Leland so aptly calls "the rages of Severn" are considered, there is no calculating how soon these substantial and solid fabrics might be undermined. A large party from Cowbridge and its vicinity had been spending the day on the Marcross rocks, and some of the party (of the families of the Rev, Robert Knight and T. Basset, Esq, of Welch St. Donais) had only left the spot a few minutes before the fall took place.—[Merthyr Guardian.]

A French paper mentions that the public library at Caen has lately been enriched by several valuable volumes not less curious than remarkable for the beauty of the writing. They are presents sent from Karibal and Coromandel, by Messrs. Firmin and Hippolite Joyau. They are written upon lamina of the palm tree, called in the country aules, and contain dramatic poetry and eastern tales, in Tamoul, one of the principal languages in the south of Hindostan.—M. Joyau, sen. has also deposited at the Museum, in the names of his sons, a number of rare shells, but a still greater quantity have been lost by a singular accident. When the boat which brought this valuable addition to the science of conchology from Ceylon to Karibal left, the cholera had just broken out, and the sailors attributing the disease to the infection arising from the dead fish in the shells, they were all thrown back into the sea. Messrs. Joyau, however, hope to repair this loss, though it will be attended with considerable difficulty.

A Terrific Sea Monster.—A boat belonging to Mr. Catt brought on shore at Seaford, a few days ago, a fish of an extraordinary kind. Its fins resembled the arm and hands (with finger nails) of a human being, and it had two protuberances or sort of pockets on each breast, which were filled with small fish.—When taken from the net, it followed the fishermen round the boat; and in order to get rid of "so ugly a customer," they procured weapons and despatched it forthwith.—[Brighton Gaz.]

This strange mannered monster, that "walks erect and looks to Heaven," must surely be a descendant of Shakspeare's Caliban, or of the nondescript sailor mentioned by Aboulfoaris, in the Eastern tale, He might, if taken alive and properly conciliated, have made a capital mate of a Nantucket smack cruising after the Sea Serpent.

The Destroying Engine.—Sir Thomas Urquhart tells us that John Napier, the father of the first Lord, and the inventor of the logarithms, had invented a destroying engine that would clear a space a mile in extent each way of the enemy; in other words, of 30,000 Turks without the loss of a Christain. But on being requested by his friends in his last illness, to reveal the contrivance, he replied. "That if he could lessen the means already existing for the destruction of man, he would with all his might apply himself to the purpose, but that they should never by his means be increased." He died 1617.—[Sharpe's Peerage, just published.]

Six Children at one Birth.—On the 30th December, 1831, the wife of Dernian Ploson, in the village of Dropin, in Bessarabia, was delivered of six daughters, all living, and only a little smaller than the usual size of children at birth, with the exception of the last, which was much the least. The mother was not quite twenty years of age, and of a strong constitution. The whole six children lived long enough to be baptized, but died on the evening of the day of their birth. The mother subsequently suffered indisposition, but got quite well.—[Gazette Medicale.]

William Hepplewhite, an apprentice on board the Indian, belonging to Shields, last year purchased and old clothes chest for 3s., which on being examined by the Custom house officers in Cork, where the vessel is now delivering a cargo, was discovered to have a false bottom, under which were found upwards of £2000.—[Durham Chronicle.]

SUMMARY.

Daniel Webster has accepted, as we learn from the National Gazette of yesterday, an invitation from the Franklin Institute of Philadelphia, to deliver an address before that body in the last week of November next.

APPOINTMENT BY THE PRESIDENT.

R. B. Taney, Esq. was yesterday appointed Secretary of the Treasury of the United States. On accepting this appointment, Mr. Taney resigned the office of Attorney-General.—[Globe, of yesterday.]

We have before us a copy of the specification of the materials and mechanical execution of the proposed new Custom House in this city. The building is to be 177 feet long, and 89 feet wide; and its form and order of the building to be similar to that of the Parthenon at Athens. It is to stand on a basement story, ascended by nineteen steps from Wall street and six steps on Pine street. There are to be eight Grecian doric columns at each front, and fifeen columns and antæ on each side attached to the walls. There is also to be a second row of six smaller columns back of and parallell with those of the main front, leaving a space of ten feet between the two rows; and nine feet between the inner row and the front wall of the building. Back of the two extreme columns of the inner row there are to be two antæ, and six antæ attached to the walls of the rear front, leaving a space of eight feet and a half between the columns and antæ. There will thus be twenty-four outside columns, five feet eight inches diameter at the bottom, and thirty-two feet high, including the capital, and eighteen antæ on the two sides, of the same height, five feet wider and three feet nine inches projection from the walls.—The six inner columns of the main front will be four feet eight inches diameter at bottom, and the antæ to correspond. The building is to be two stories high, except the great business hall part of which is to be vaulted as high as the roof will permit and its centre finished with a dome sixty-two feet in diameter. This hall will occupy the centre of the building, and will be one hundred and fifteen feet long, leaving a small vestibule at each end to enter from. It is to be seventy-seven feet wide in the *centre part*, which is a circle of seventy-feet diameter, with the length and breadth of the room extending beyond its circumference to these dimensions; and the four parts so extended beyond the circle are thirty-three and a half feet wide, leaving six rooms and three circular staircases in the four corners, the two largest rooms to be twenty-four by twenty-one feet each, besides a square staircase in the rear, and three vaults for papers at the two ends of each vestibule. The same division of the room is made in the second story. Nearly the same number, shape, and size of rooms are had in the basement, as above in the other stories, leaving all the area of the same shape and size as the great hall immediately about it; with the addition of sixteen fluted doric columns to support the vaulting and the pavement under the dome of the great hall.—[Evening Post.]

U. S. Ship St. Louis.—The following is a list of officers attached to this vessel, which went to sea yesterday afternoon.

Commander—Thomas Moore Newell, Esq.

Lieutenants—1st, Wm. S. Harris; 2d, Wm. C. Wetmore; 3d, Samuel Mercer; 4th, Oscar Bullus; 5th, Richard H. Morris.

Surgeon—John Wiley.

Acting Sailing Master—J. Wentworth Cox.

Purser—Francis G. McCauley.

Assistant Surgeon—Euclid Borland.

Midshipmen—Thomas W. Melville, John G. Todd, N. E. Lane, James W. Revere, Wm. W. Smith, T. A. M. Craven, E. C. Ward Jr., Thomas M. Mix, John N. Maffit, Samuel Garrison, Charles Elliot, James A. Doyle, M. Hunt, Jr., F. Oakes, W. E. Newton, J. E. Duncan.

School Master—Felix Giendicella

Gunner—Francis Gardener.

Boatswain—John Ferris.

Sail Maker—Thomas J. Boyce.

Purser's Steward—A. O. Whelpley.

OYSTER STANDS.—In New Orleans these indispensable contributors to good living are, it seems, made a source of municipal revenue. The Mercantile Advertiser of 5th inst. gives the names of twenty-one let at rates varying from $180 to $900, producing an aggregate revenue of $9455.

Extract of a letter dated Apalachicola, Aug 28th 1833.—"Thinking it may be a matter of some interest to your eastern friends, shipping in this direction, to fully understand the facilities of transporting all kinds of goods from this port to the interior, I am thus particular. At present we have five steamboats which run constantly between this place and Columbus, Geo. affording an opportunity to forward with cheapness and despatch, goods to any part of the country bordering on the Apalachicola & Chatahoochee rivers, and a very large business is now doing between this port and the interior. The Cotton crops are very abundant, and should the sea island continue good, as there is now every prospect of, the quality will be superior."

Naval Architecture.—A gentleman in this city, well known for his attachment to science, and patronage of the useful arts, is building a sea schooner of about 200 tons, intended to ply from this port, on the plan* and under the direction of Mr. Annesley. The model is allowed to be very elegant. As she now stands for planking, she presents a most singular and interesting appearance. Mr. Annesley's system must, we think, eventually succeed, as his vessels are seaworthy to the last, may be made to any model, and possess qualities that are indestructible by ordinary wear and tear.—[Albany Daily Adv.]

* The U. S. schooner Experiment was built upon plan.

[*From the Norwalk Gazette.*]

INDIANS.—Some of our heavy land-holders have been alarmed during the past week by the appearance among us of three Indians of the Mohegan tribe, who came to lay claim to a tract of land hereabouts, upon the strength of tradition in the tribe, that they once owned a piece, which was not sold but leased to some persons of the name of Dixon and Townsend.—They further stated that the land was contiguous to, or embraced "the Old Orchard," which has led to much speculation respecting the location of the Old Orchard, and who at present was the unfortunate possessor. After sauntering about two or three days, they disappeared, as wise probably as when they came.

A friend has handed us the following memorandum of the cost of such of the original township of Norwalk as lay between Saugatuck and Five Mile Rivers, extending an Indian's day's walk into the country:

From Norwalk river to Saugatuck river, and one day's walk into the country:—8 fathoms wampum, 6 coats, 10 hatchets, 10 hoes, 10 knives, 10 scissors, 10 penknives, 10 fathoms tobacco, 3 kettles, 6 hams, about 10 looking glasses. From Norwalk river to Five Mile river, and as far as an Indian can walk in a day in the country:—10 fathoms wampum, 3 hatchets, 3 hoes, and when the ships come* 6 glasses, 12 tobacco pipes, 3 knives, 18 drillers, 10 needles.

* Whether the 'ships' ever 'came,' does not appear.

The London Athenæum states that Lander, the African explorer, who has lost 25 of his party, was expected in England in September or October, and the letters from him are said to speak very confidently of the ultimate success of the commercial objects of the expedition. Nothing, however, in a mercantile point of view, could compensate, we should think, for such a fearful expenditure of human life as has already attended this wild undertaking. Every succeeding expedition into this fatal country seems to be more disastrous than those which preceded it; and though the cause of science has been in some degree promoted by recent discoveries, yet to what does this extension of our geographical knowledge amount, when the climate of the regions explored is so destructive to European constitutions, and the people that inhabit them so rude and barbarous, that while these considerations forbid the idea of commercial intercourse, the gratification of curiosity is the only reward of the perils encountered.—It is one thing with Denon and Belzoni to trace the mouldering vestiges of civilization in those parts of the same continent, where, as man once attained a high degree of refinement, he may again again assert the better qualities of his race—and another to plunge among hordes of primitive barbarians, which Providence would almost seem to have placed in such an inaccessible country for the very purpose of shutting them out from the intrusion of the rest of the world. Yet, while it is lamentable to think of so many noble and adventurous spirits—men that would give soul to any enterprize—lavishing energies that might be more usefully applied, in such a hopeless cause—one cannot withhold a full and proud, though most regretful tribute of admiration, to that undaunted courage, that most indomitable ardor of enterprize, which urges these British adventurers upon a fate so certain and so melancholy.

A spot on the sun was seen in this town yesterday, for the first time since the Spring. It probably entered on the sun on Wednesday, and will occupy about a fortnight in crossing his disc. It is quite small, and cannot be seen without a telescope.

Perhaps it may be remembered that the summer of 1816 was one of the coldest ever experienced in New England; a severe frost having occurred in every month, proving destructive to the hopes of the agriculturist, and 'causing as much loss as the embargo and war.' This remarkable coldness was generally ascribed to the immense spots visible the whole summer on the sun, which were sufficiently large to be seen through a piece of blackened glass, and were ascertained to cover about one third of his surface. But how shall we account for the almost equal coldness of the summer of 1833? It cannot be ascribed to the same cause as that of 1816, as during the last four or five months we have not been able to perceive any spot, and the whole surface of the sun has appeared, even when viewed through a powerful telescope, clear and serene.—[Newport Mercury.]

The following extract from "Smith's History of Canada," would almost induce a belief that the awful visitation of 1832 was not the first appearance of cholera on this continent. The author says:—

"Early in the spring of this year a fever of the most malignant and epidemical kind broke out at Quebec, and generally throughout the country. It was called the purple fever, and so destructive was it, that thousands died in the course of a few days."

The discoloration, and fatality of the disease, (which occurred in 1710) are two features strongly resembling Asiatic Cholera.

FOREIGN INTELLIGENCE.

By the Britannia, from Liverpool, we have our Londen files to 16th ult., and by the Poland, from Havre, we received on Saturday our Paris papers to the 17th ult. Such extracts as possess ordinary interest are annexed. The quarrel in Portugal is not yet settled, Pedro not being in force to move from Lisbon for the relief of Oporto, which was still beleagured and closely pressed by the Miguelites.—Of Miguel himself we have no tidings.

The disturbances in parts of Switzerland were pacified by the energy of the Diet, without the intervention of foreign troops.

Falmouth, Aug. 13.—The Corsair yacht arrived here this morning from Lisbon, which place she left on the 1st inst. The following news will be interesting, and will show the state of the public mind in the city. Don Pedro was publicly walking about with the greatest confidence, unarmed and unguarded, and was greeted with the warmest acclamations. A circumstance occurred on his landing which made him at once popular with the people. When he was stepping from the barge on shore, some of the police endeavored to clear the way with their swords, when he called on them to put up their weapons, and taking out his own sword, flung it into the sea. About 800 police or militia had been raised for the protection of the city. The behavior of all classes was beyond all praise.

The conduct of Don Miguel's police had excited a great deal of sensation at Lisbon. It appears that the Duc Cadova, with about 3000 police, after they had fled from Lisbon, retreated to Caldas, about 25 miles north of Lisbon, and sacked the place for four hours, committing the greatest depredations on the persons and property of the inhabitants. On the 31st July they were on the road to Luceria.

A division of Don Miguel's troops, about 1500, had forded the Tagus at Valoda, near Santerim, and a steamer was sent up by Don Pedro to negotiate with them. It was generally supposed that they would turn in favor of the young Queen.

The Corsair called off Oporto on the 5th, but nothing of importance had occurred since our last advices. The Miguelites, however, continued to harass the city by continually firing on the town and at all the boats which came within the range of their guns. At Oporto they were anxiously expecting that the lines of Don Miguel would be broken by troops from Lisbon. No movement had taken place at Lisbon for that purpose, and, in the present state of affairs, it does not appear likely that a sufficient force could be collected by Don Pedro. The contending forces at Oporto must therefore fight it out.

The Donna Maria was cruizing off Oporto.

The Committee of the Parisian Association in favour of the press have sent 2000 francs to the office of the *National*, in aid of the payment of the fine to which that Journal was condemed on Saturday. The Central committee of the Association of the Departments have remitted 500 francs for the same object.

The Brussels papers state, that at Charterey, on the 8th August, 38 persons were drowned in a moat. This melancholy accident happened in consequence of a sudden irruption of water from an ancient aqueduct, which in less than two minutes rose above 70 feet.

Paris, May 13.—The Courier Francais gives the following as a communicated note:

An English journal having announced that M. Antonio Carlos d' Andrada had arrived from Rio Janeiro, commissioned to invite Don Pedro to return to that city, where, it was said, a party was anxious to receive him, we are authorised to declare this is a fiction, invented to divert Don Pedro from the Regency of Portugal. Brazil is by no means desirous of the return of this Prince, whose abdication was voluntary; and M. d'Andrada would never undertake a mission to recall him, having himself been imprisoned, and afterwards exiled, by the arbitrary decree of Don Pedro, when he dissolved the Constituent Assembly of Brazil, of which M. d'Andrada was one of the most distinguished Members.

The Munich Gazette expresses a hope that the Congress of Toeplitz will restore peace to the world, by setting bounds to the spread of constitutional opinions. After recapitulating the various agitations by which Europe has been disturbed in consequence of revolutions, it points out to the Sovereigns the three principal points which call for their attention and interference;—they are Portugal, Italy, and Spain.

Prussia.

A letter of the 1st inst. from Berlin, gives the following as the principle questions to be discused at the interview between the Emperor of Austria and the King of Prussia:—1. The means of controlling the Coustitutional Chambers of Germany without exposing the country to a revolution.—2. The censorship and freedom of the press.—3. The Universities:—4. A treaty on the commerce and custom duties of Prussia.—5. The occupation of Frankfort, and the number of troops that Austria and Prussia are to send as their contingents, without exciting jealousy on either side.—The question of Belgium, so far it relates to Luxembourg and the Germanic Confederation.—7. The question of Poland—but, as Russia is a party interested in this, it is said that Count Orloff, on his return from Constantinople, will be sent to Tœplitz to treat with the two monarchs.

To this series is to be added, whatever the Berlin and Hamburgh papers may say, that the Portuguese question and the treaty to be formed between Austria and Prussia for opposing on the one hand, the Anglo Gallican alliance, and on the other, to guard against the Russian Cabinet, which, notwithstanding the harmony that at present subsists between the Courts of St. Petersburgh, Vienna, and Berlin, gives umbrage to the other two Cabinets. On several of the above questions the King and Emperor entirely accord; these are those which relate to the Constitutional Chambers, to Luxembourg, and Poland, but they are not so with regard to the Universities, to the Customs, or the occupation of Frankfort; and it is in consequence of the difficulties which arise out of these latter questions that the interview has been agreed upon.

Charles X., it is said, has addressed a letter to the Sovereigns assembled at Toeplitz, expressing his surprise at not having been called to the Conference about to be held in that town. He declares that the difference which have occurred between him and his subjects have not made him lose his right of being a member of the Holy Alliance, in conjunction with the Sovereigns, his former allies. The abdication which he signed with his son, in favor of the Duke of Bordeaux, not having been accepted by France, ought to be considered as null and void. He consequently claims the full execution of the guarantees stipulated by the treaty of 1815.—[Temps.]

The Frankfort Journal gives the following extract of a letter of the 30th ult. from St. Petersburgh:—

"Several foreign journals have lately talked of a journey of the Emperor in foreign states, upon political affairs of the highest importance, but we believe that we can confidently assert that there is no foundation for these reports, and that his Majesty will not quit his own diminions."

Spain.

Madrid, August 3.—"The King is still in a suffering state, although rather better. For three days he kept his bed, but yesterday he was able to sit up. The Government has received intelligence of Don Carlos having placed himself at the head of Don Miguel's staff. An autograph letter complaining of this act had been addressed by King Ferdinand to his nephew. This letter has only revived the misunderstanding that has existed between our Government and that of Don Miguel, and a rupture between the two Governments appears to be inevitable. In fact, by a second note sent off three days ago to Lisbon, our two Ambassadors have received orders to quit that capital in 24 hours, and they are expected here in three or four days.—Our Gazette has ceased to style Don Miguel King, and no longer designates the troops of Donna Maria by the name of rebels.

Madrid, Aug. 6.—By a royal decree, Don Josef Manuel de Anjona, Minister of the Council, has been appointed Superintendan, General of Police.

Switzerland.

Extract of a letter of the 10th inst. from Geneva:

"The complete pacification of Switzerland may now be considered as very near at hand, thanks to the unexpected energy displayed by the Diet, and its determination to occupy the whole of the cantons of Schwytz and Basle, until the fate of these two states be definitely settled. The hypocritical disavowal of the Conference of Schwytz is only a new fact to be added to the history of the intrigues of the Sarnean faction. A revolutionary manifesto was to appear if the attempt of Abyberg succeeded, and papers exciting to insurrection had been circulated in great numbers in the cantons of Lucerne and Berne. The Diet has duly appreciated the act of submission forced from the oligarchs of Schwytz.

In the spring of 1798, as in the autumn of 1822, these primitive Swiss, who boast of loyalty and patriarchal virtues, lulled asleep the vigilance of their enemies by capitulations, which they violated as soon as they felt strong enough to commence hostilities. The massacre of Nidwald, on September 9th, 1789 which became a subject of imprecation against the Directories of France and Switzerland, can be imputed only to the traitors who had misled the prevailing party by a foreign submission, and tore to pieces the act of amnesty. The fear of a foreign intervention appears now to have entirely subsided. The Austrians have hitherto made no movement towards the frontiers of the Tesin and Grisons. The Governor of Neufchattel has lately set out for Cologne, leaving to his faithful allies of Sarnen all the responsibility of the first attempts, in which he would have subsequenly acted a part, in the name of his master, if success had attended the wishes of the Holy Alliance. The Ministers of Austria, Prussia, and Russia, assembled at Baden, have, it is said, addressed a peremptory note to the Diet, which appears to have answered it with dignity as well as energy. The French Ambassador, on the contrary, has expressed a lively interest in the national cause, and much devotedness to the Chiefs of the regenerated cantons. The Canton of Valais has hitherto made no hostile demonstration. On the least indication of treachery, three or four thousand men from the canton of Taud could occupy the country from St. Maurice to Gondo.—We learn from the Basle, that the consternation produced by the events of the 3d and 4th inst. has been followed by general dissatisfaction with the government. M. Burkhard, the burgomaster, has taken refuge on the French territory, in order to escape the popular vengeance. The diet seems to have come to the wise resolution of maintaining an army on foot of 22,000 men, until the country be entirely pacified, and securred against the danger of foreign intervention.

The following is an extract from the Zurich Gazette:

"The Ambassadors of Austria, Prussia, Russia, Sardinia, and Bavaria, have arrived here, and made a visit to the President of the Diet, with whom they held a conference, which lasted an hour: they set off again next morning at eight o'clock. The conference did not assume an official character, but these gentlemen expressed great interest in the men of Basle.—They inquired whether, in case of necessity, force would be employed, and received an answer in the affirmative. They complained of the interference of the Poles in favor of the people of Liestal; but it was explained to them, that as the people of Basle were enabled by their money to procure assistance of every description, those of Liestal were entitled to obtain succour wherever they could find it. The Ambassadors talked loudly of the Compact of 1815. They were told in answer, that it was bad, but sufficed to enable Switzerland to assume a respectable position in relation to foreign states. There was no discussion on the subject of Schwytz. The conference terminated with civility, because a tone of vigor was adopted.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR,
35 Wall street.

New-York, August 14, 1833.

AMERICAN INSTITUTE.

☞ THE Sixth Annual Fair of the American Institute will be held in the city of New-York, at Masonic Hall, on Tuesday the 15th of October next, and continue three days.

Premiums, consisting of Diplomas, or Medals, will be awarded, as usual, for such articles of American production, as shall be adjudged superior either in material or workmanship.

As a new impetus seems to have been lately given to American Industry, it is confidently expected that the Fair announced for October next, will present still more decisive evidence of the advancing condition of our agriculture, our manufactures, and the arts, than any of those which have preceded it.

Such ingenious and useful machinery as may be conveniently transported, and put in operation, will give interest and spirit to the occasion.

Each article should be labelled with the name of the manufacturer, or producer, and with the agent's name, and number, in this city.

The design is to inform buyers where they can supply themselves with the best articles In this way, by means of former Fairs, many excellent workmen have become better known and have obtained permanent and profitable customers, who, while they have been better served, have at the same time rewarded and stimulated American skill and industry.

Articles entered for premiums must be delivered as early as Monday, the 14th of October.

More particular notices will be published previous to the Fair. For any other information which may be desired, apply to either of the Managers, in person or by letter.

JAMES LYNCH,
ANDREW WILLIAMS,
EDWARD T. BACKHOUSE,
CLARKSON CROLIUS, Jr.
WM. F. PHYFE, } Managers.
JOHN SAMPSON,
JOSEPH TITCOMB,
JARED L. MOORE,
GEORGE BACON,

New-York, July 4th. 1833. A29 t13 oct R J

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson. under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J B. Jervis. Eng. M. & H. R. R Co, Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches. manufactured by the subscriber's Patent Machinery. which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new* among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Rail road. I cheerfully furnish thee with the following information The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols with 100 plates, containing also the economical properties of 500 genera of American plants $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar

AMERICAN FLORIST, with 36 figures—price 36 cts.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
S1 R J M M & F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office Apply, post paid. S1 R J M M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlaem Railroad, now in operation.
J25 tf

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

RAILROAD CAR WHEELS AND BOXES,

AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry. Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustment.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Rail road Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

From Canton.—We are indebted to Captain Bancroft of the ship Boston for Canton papers to the 20th April. They contain some items of interest.

The Chinese report that intelligence has reached Canton, of the king of Cochin-China having despatched a letter to his Imperial Majesty the Emperor of China, to which he has replied, concerning a foreign ship which has appeared upon the coasts of the former potentate, and from which some persons have visited the shore endeavouring through the medium of the Chinese character to establish a commercial connection with the country upon terms of amity and good feeling. This vessel which has been conjectured to be the missing *Sylph*, is more likely to prove the U. S. ship *Peacock*, which left here some time since, as was reported, upon a voyage of the kind, though no official information was given respecting the destination of that vessel. We trust that there is no serious ground for apprehension respecting the Sylph ; she may have been detained by a variety of causes of which we here can know nothing : had any serious accident happened to her, the intelligence would no doubt have reached Canton officially, long ere this.

On the 8th Dec. was discovered by the officer in command of H. N. M. schr. "Pollux," a shoal in the Carimata Passage, the middle of which is in lat. 3° 25 30" South, and long. 109° 40 50" East of Greenwich. The extent of this shoal is about 3-4 German miles, lying N. and S. It is supposed to be the same as that placed on some charts as the "Enhuiven Sand."

A new species of portable gun or harquebuss has been invented, which is carried by two men, and which has been found to be very effective in the late rebellion near *Leen chow* ; the governor accordingly, approving of the new weapon, orders those new making to be prepared immediately, and the troops instructed in their use without delay.

For those who wish to know "life in China," we add a few more amusing extracts.

A red paper slip published at Canton, contains the following account of "fashienable arrivals," and an announcement of the Imperial condescension towards the Tsung-tuk and Foo-yuen.

The Wan-wae, Lew-tih-chang, having returned from a mission to the court at Peking, brought as presents to the Governor and deputy Governor the word "Happiness" inscribed with the vermilion pencil, i. e. in the Emperor's own hand writing, and portions of deer's and tiger's flesh ; in consequence of which all the civil and military officers of the city have sent in their compliments and congratulations.

Literal Translation of an Ink-Maker's Shop-Bill.—At the Shop *Shun-wang*—very good Ink—fine, fine,—Ancient shop—grandfather, father and self make this ink,—fine and hard, very hard,—picked out, very fine and black, before now,—sell very good Ink, prime cost very high. This ink is very heavy,—so is gold. No one makes like it. Others who make ink, make it for money, and to cheat; I only make it for a name. Plenty of gentlemen know my ink. My family never cheats, always bears a good name. I make ink for the "Son of Heaven," and all the mandarins round. All A-kwan-tsae's (gentlemen) must come to my shop and know my name!

[We have long been in the habit of considering Mr. Warren, of No. 30 Strand, London, and the Lottery Office keepers in America, as the princes of the noble art of "puffing," but have been recently convinced that our friends the Chinese leave them far behind. The following translation of an ink-maker's card, will vie with the most perfect of the celebrated Blacking-manufacturer's tributes to the charms of his "liquid jet."

A **Great Cavern Discovered in Ireland.**—A correspondent of the Tipperary Free Press, gives an account of a Magnificent Cave, lately discovered near the town of Caher by some workmen employed in quarrying stones. The first indication of the subteranean edifice, was an opening in the rock, about 20 feet from the surface capable of admitting the body of one person. Prompted by curiosity, one of the men entered the opening, and proceeded along a sloping declivity which terminated, at the distance of 40 or 50 feet from the entrance, in an abrupt descent of about 20 feet. Unable to advance further he returned, and having procured a ladder, he, accompanied by two or three of the workmen, proceeded to explore the cavern. Having descended the ladder they proceeded along a passage about 300 yards in length, 40 feet in breadth, and generally between 30 and 40 feet in height, at the termination of which a superb cavern, nearly one mile in circumference, presented itself to their view. This grand cavern seemed to be supported by about 150 crystal columns, varying in height from 30 to 40 feet, and in diameter from 1 to 8 feet. In the middle of this spacious cavern is placed a crystalized petrifaction exactly resembling a table, about seven feet in length and two in breadth, surmounted with crystal candelabras of the most curious construction." The subject would be endless were I to enumerate the variety of surprizing creations which nature has displayed in this subterranean palace. At the distance of 700 or 800 yards, and immediately opposite the entrance, lies another passage, which led them into what they called the lower cave, which is about three-quarters of a mile in circumference, supported, like the former cave, by lofty pillars, and decorated with the most fanciful productions. Having proceeded through this cave they discovered an aperture, which having ascended by a flight of eight steps, a sight presented itself to their view capable of impressing the strongest emotions of surprize and astonishment on the mind of the spectator. It would be useless for me to attempt a description of this astonishing hall, as nothing less than the descriptive powers of a Sir Walter Scott could render it even moderate justice ; suffice it to say, that it is about three miles in circumference, supported, like the other caves, with innumerable pillars, and adorned with almost perfect imitations of all that art and nature presents to our view.—However, I cannot forbear remarking that in the centre of this magnificent hall, and depending from its roof, appears a petrifaction resembling the body of a horse, through which, at the distance of fifteen feet from the floor, issues a stream of pure water, which, after forming several evolutions on its crystalized bed, disappears, with hollow murmurings, at the furthest extremity of the hall. Through an opening to the right, in the last-mentioned hall they descended, by a flight of ten or twelve steps, to a cavern called the long cave, which is about one mile and a half in circumference, supported in like manner by superb columns, and adorned with many of the same imitations of nature and art. Amongst the imitations of art is a hollow crystalized petrifaction resembling a drum, which, when struck upon, produces a sound, the reverberation of which will continue for several minutes. Having proceeded thro' the last mentionod cave, they came to a fissure in its right side, which led them into what they called the cellar cave. This cave, unlike the rest, is not supported by pillars, not adorned with those productions of sportive nature for which the others are so highly appreciated; but the spectator is amply compensated for the absence of those ornaments by the view of a deep and river, which urges its subterranean course through the middle of the cave."

Discoveries of this kind, which are not uncommon in this country, many parts of it, like the limestone regions of Pennsylvania and Kentucky, being celebrated for their immense cavernous passages, extending sometimes for many miles in length, and spreading out in their various ramifications to an incredible extent, tend as much as any display of her power to awaken our reverence for the mysterious operations of Nature. What a singular manifestation of her economy is that which hollows out those subterranean chambers, more vast than any human art can construct, more splendid than any human imagination can devise, which builds far beneath the surface on which we move abodes as bright as those we dream of in other worlds, where new glories of creation are to be revealed to us, and then leaves them tenantless; with no eye to kindle with admiration at the dazzling forms of beauty heaped in prodigal confusion along winding aisles and vaulted avenues that never echo to the voice of praise, with not even an animated creature to share their shelter, or a ray of Heaven's light to smile upon their solitary grandeur! The mud hut of the peasant is reared above their swelling domes, and centuries watch the prouder edifices of a city succeeding, while thousands wander homeless over roofs that might shelter their whole race, dreaming not that all the wealth whose profusion they envy in others, could never purchase a palace or a tomb like that beneath their feet. Decay comes not there. The frail structures, reared by human hands above, perish away from the earth and Time sweeps their very memory to oblivion. But there—grand, solemn, and enduring—there, still as when first shaped out by an Almighty hand, repose those silent temples. The hidden retreats of Nature, when man would pry into all her secrets, and revealed only from time to time, as if to show, that when—the farthest regions of the earth explored—he carries his view to other planets, there are worlds beneath his feet he dreams not of; Teaching him, perhaps, to study further the mysteries of his own being, before he would attempt to resolve those of that One, who is thus glorified in all his works, hidden and manifest.

THE TOMB STONE.

Moss covered stone! in this mysterious ground
 I greet thee—sacred to God's hallowed dead—
While Evening's peaceful glories, streaming round,
 On thee are shed.

Beside thee hath not sounded, for long years,
 The mourning voice of friends,—now mouldering too:
O'er thee, no longer, maids, with pious tears,
 Spring's first flowers strew.

Who shall thy slumbering tenant now make known?
 A sculptured skull remains, his tomb to grace:
Worn is his epitaph ;—by weeds o'ergrown
 The name's faint trace.

To thee I fly from life's tumultuous noise,
 When Evening o'er the woods her splendor flings:
Altar of hope where hover heavenly joys
 On seraph wings.

MARRIAGES.

On Thursday evening, 19th inst., by the Rev. Dr. Berrian. Smith Lawrence, to Caroline, daughter of Samuel Betts, Esq.

On Tuesday evening, Sept. 24, by the Rev. Dr. Lyell, Mr. John J. Aymar, to Miss Sarah Babb, all of this city.

On Wednesday evening, the 25th inst., by the Rev Dr. McAuley, Courtlandt Van Buren Hasbrook, of the firm of Holmes, Bailey & Co., of this city, to Margaret, daughter of Robert Ainslie.

On Monday, the 23d instant, by the *Rev. J. M. Wainwright*, George C. De Kay, to Janet Halleck, daughter of the late *Dr. Joseph Rodman Drake*. all of this city.

In Owego, on Tuesday, 17th inst., by the Rev. Mr. White, Mr. Joseph S. Bosworth, Esq. of Binghamton, to Miss Frances E., daughter of Charles Pumpelly, Esq.

At Bridgewater, Oneida co., on the 13th inst., by the Rt. Rev. Bishop Onderdonk. John H. Smith, Esq. of Port Hope, Upper Canada, to Miss Augusta L., daughter of Isaac Woodworth. Esq.

DEATHS.

In this city, on the 25th instant, Mrs. Ann R. Collins, consort of Josiah Collins, of Edenton, North Carolina.

Last evening, of consumption, aged 19, Edward A. Firth son of John Firth.

Thursday evening, 19th inst., Julia F., daughter of Walter Jaggar, aged 2 years and 11 mouths.

Friday morning, Sept. 20th, of a lingering illness, which he bore with christian fortitude and resignation, Mr. David Webden, in the 34th year of his age.

This morning, Aquila Paca, son of George W. Giles, aged four years.

At Staten Island, on the 17th inst. Mr. James S. Perine, aged 37 years. While he lived he was respected and beloved by all who knew him; and his death is deeply lamented by a numerour circle of friends and acquaintances.

Last night, after a lingering illness, Miss Adeline P. Hart, daughter of the late Peter G. Hart, Esq. of this city.

Last evening, suddenly, James McCrea, in the 41st year of his age.

On the 24th instant, at the residence of his father, in Schenectady, after a very short illness, of Consumption, William Porter Stuart, late of this city, a young gentleman of highly promising talents, universally respected and beloved by his acquaintances and friends; aged 21 years.

At Onondaga, New York, Mr. Edwin K. Sackett, eldest son of the late Samuel Sackett, of Brooklyn, Long Island.

At Albany, on Monday morning, Miss Elizabeth Phelps Sanford, aged 22 years, youngest daughter of Mr. Elihu Sanford, of this city.

In Wales, Erie co., suddenly, on the morning of the 14th inst. Gen. Joseph McClure, aged about 60, Postmaster at Franklinville, Cattaragus county. He was returning from Buffalo, where he had been on business, and while sitting in his chair he suddenly expired.

In Poughkeepsie, on Sunday the 22d instant, Mrs. Sarah Thompson, wife of Hon. Smith Thompson, in the 56th year of her age.

In Ohio, the Rev. President Storrs, of Hudson College.—He was a gentleman of great literary and scientific attainments, a scholar and a Christian. He filled the elevated station to which he was called with credit to himself and usefulness to the institution, and his loss will be deplored as a public calamity.

At Orange, N. J. on Sunday afternoon, of apoplexy, the Hon. Isaac Pierson, aged 65 years, late a Representative in Congress from that State.

At Williamstown, Mass., on the 19th inst., Mrs. Catharine, wife of Dr. David Rosseter, of this city.

On the 13th Sept. Mathias Valentine, of Westchester, aged 42 years.

At New Orleans, of yellow fever, on the 1st inst., Robert Waterman. jr.; son of Capt. Robert Waterman, of this city, aged 16 years

At New Orleans, on Sunday morning, Peter Martin, a native of France, but for many years a resident of Detroit.

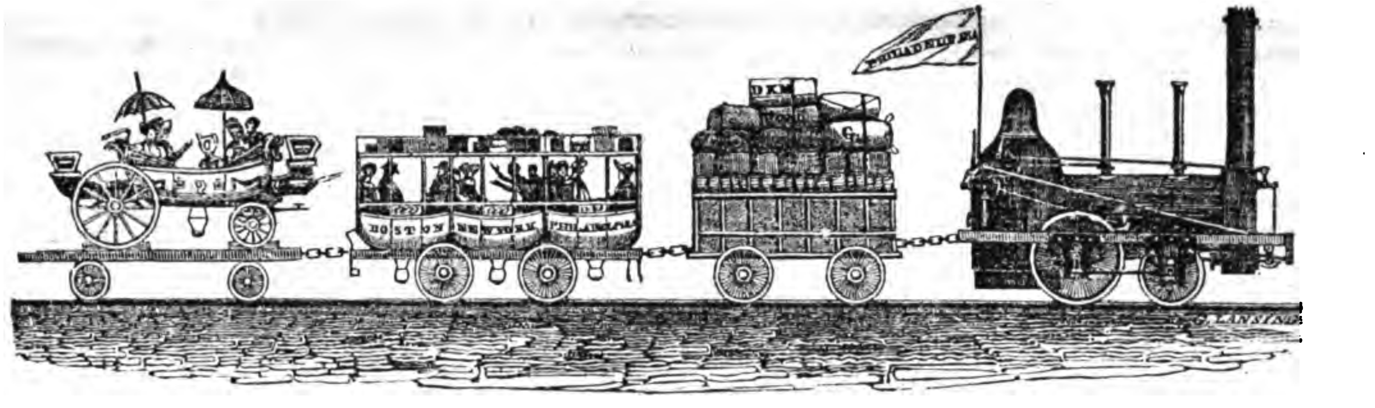
At the same place, on Sunday, Mrs. Caroline Clark, of Boston, aged 30, wife of Wm. Tufts, Esq. of the former place.

At the same place, on the 7th inst. of yellow fever, Franklin M. Fellows, aged about 24, a native of Boston.

At the same place, on the 4th inst. Wm. Lyons, a native of New Jersey.

At the same place on Friday last, in the 30th year of his age, the Rev. Carlise Leiris, Pastor of the Evangelical Protestant Church of that city.

At the same place, on the 8th inst. of yellow fever, Daniel Proctor.



AMERICAN RAILROAD JOURNAL, AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, OCTOBER 5, 1833. [VOLUME II.—No. 40.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, OCTOBER , 1833.

Undulating Railways.—A large portion of the Journal this week is devoted to the subject of Undulating Railways. It has caused a warm discussion in England, and will, no doubt, call out some of our esteemed correspondents. We have neither leisure nor science to discuss it, and, therefore, must rely upon those of our friends who have both at their command.

Having, by experience, felt the want of a more complete Index to the Journal, we have had one made for the *first* volume, and for the the *first six months* of the second volume—and for the greater convenience of those who desire to bind the Journal in parts of *six months*, instead of the whole year in one—the index is printed in parts of *six months*, with a *title page* to each. They will be forwarded to all those who are now Subscribers, in the course of the ensuing week. At the close of the year another index and title page, for the second half of the present volume, or from the 1st of July to the 1st of January, will be forwarded with the last number of the volume. This measure has been attended with some expense, but finding that most of our subscribers are desirous to bind and preserve the Journal, we have encountered it for their convenience and our own satisfaction.

☞ *Editors who receive this Journal in exchange, will please discontinue all advertisements of my various publications which they now have in their paper, as I may find it necessary to discontinue it at the close of the present volume. Those who have received subscribers, and not yet remitted the money, will please do so,* by mail, *as early as possible.*

The *increased expenditure*, in consequence of the improved appearance of the Journal since October last, has so greatly exceeded the increase of subscribers, which was anticipated from the measure, that I am *compelled* either *materially* to reduce its *cost of publication,—increase its circulation*, and sale of copies on hand, (*of which I can furnish five hundred complete sets from its commencement*)—or discontinue its publication. The friends *of*, and those interested *in*, Railroads, are certainly the *best* judges of its utility, and of its tendency to promote the cause to which it has been mainly devoted; and, therefore, it will be for them to say whether, *by their aid in extending its circulation, and in the sale of copies now on hand*, it shall be continued longer than the *close of the present* volume—First of January next—or whether it shall be then *discontinued* for want of a sufficient number of subscribers to pay the expense of publishing it.

The sale of *one half* of the copies on hand, with an equal increase of subscribers for the *current and ensuing volumes*, would be ample to secure its *successful continuance*, by enabling me to meet promptly its expenses, and also to derive a small compensation for my own time devoted to it, *which, thus far, has not been the case*—but, on the contrary, it is indebted to me several hundred dollars, in addition to my having superintended its publication without compensation for nearly two years. I would, therefore, observe, that unless the sale of *copies on hand*, and the circulation of the *present* volume should be *considerably* increased *before* the *close* of the year, I shall either change its *form, reduce its size, and discontinue most of my exchanges*, and thereby reduce its expenses of publication, or discontinue it *altogether*, and devote my attention wholly to my *other publications*—which are far more liberally patronized, and from which I derive some compensation for my services.

*** Would it not be well worth the while for each Railroad Company in the United States to order a *few copies* bound, for the use of their Engineers, while engaged in *surveying and constructing* their Railroad? Is it not possible—indeed, is it not *highly probable*—that they might be benefitted in the saving of expense, by some of the numerous suggestions and plans therein published, to *many times* the amount of the *cost* of the *Journal?* In the *survey* of a route which costs thousands—in the *construction* which costs *hundreds* of thousands—or in the completing of a long line of Railroad, with its machinery, engines, freight, and passenger cars, and other numerous appendages, which cost MILLIONS—is it not *almost certain* that some useful information, or hint, would be derived from the "Railroad Journal," which contains more reading upon the subject of *Railroads, Railroad machinery and improvements*, than all the other periodicals in the United States together? There cannot, in my opinion, be a doubt of the advantage they would derive from such a measure. Should those interested in Railroads agree with me in this suggestion, and act accordingly, by giving me orders for the Journal, at *an early period*, so as to increase my list of subscribers to *fifteen hundred* by the close of the year, it will be continued with increased energy and improved appearance.

D. K. Minor.

P. S.—It may not be amiss to say that the expenses of publication have exceeded the receipts from subscribers, in consequence of the publication of a *larger number* of copies than were *subscribed* for—upon expensive paper, and with a heavy cost for engravings—and that the sale of *one half* of those now on hand would place the *balance* on the *other* side of the ledger.

Should it be said that I have "assured the public of its *continuance*," or that "its permanence was established beyond a doubt," &c., I would reply that, from the favor with which it was received, and the assurances given me of aid in its circulation, of that fact *I had not a doubt*—nor do I *now* doubt its permanence—as I trust that the *friends of Railroads and Internal Improvements*—who are also, generally, *its* friends—will make an effort to extend its sale and circulation, so as to place it upon a fair basis. *Three hundred additional* subscribers will insure its continuance.

N. B.—*Should* it be discontinued, or changed in its appearance, at the close of this volume, timely notice will be given, and those who may have paid in *advance of that period*, will receive the balance in money—unless they should be willing to receive the Mechanics' Magazine, and Register of Inventions and Improvements, to the amount then due them.

New Motive Power.—Dr. Ritchie, in one of his recent lectures on electro-magnetism, at the Royal Institution, proved by experiments that by suddenly changing the poles of an electro-magnet, a bar of soft iron might be made to revolve with considerable force about its centre, thus obtaining a prime mover, which may probably be applied to useful purposes.

Grand Junction Railway.—The act for this railway, which is to unite the Liverpool and Manchester with the Birmingham railway, has passed through both Houses without opposition, and received the royal assent at the same time with the Birmingham Railway Act.

The Undulating Railway. By Junius Redivivus. [From the London Mechanics' Magazine.]

Sir,—Your correspondents, Messrs. Badnall and Cheverton, have fallen on me tooth and nail, on the subject of my letter respecting the *undulating railway*, but neither of them seems to have accurately read the letter in question, and consequently without taking into consideration the fact of the very bare data on which I wrote, they pleasantly enough assume that I ought to have taken another ground of attack. All that I knew of the railway was from a casual hearing that there had appeared a paragraph in the 'omnium gatherum' of the 'leading Journal,' stating that an undulating railway had been invented, whose effect would be utterly to destroy all level railways by its superior utility. The *Athenæum* I have not seen. Feeling interested in the matter, I caused inquiries to be made at the Adelaide Gallery, but lo! the carriage had disappeared, and the inventor had retired to 'Brummagem.' Inquiry was made for a prospectus, and reference was given to Messrs. Sherwood, Gilbert, and Piper. Application was made to that firm, and the reply was, that nothing was known of it. Now, what inference could be drawn under these circumstances, but that the whole thing was a gull? I therefore assumed that the object of the undulating railway was to increase power or diminish friction, in short, to make a given amount of power do more work. Upon this assumption I reasoned, and I have reason to know that the reasoning was to the satisfaction of many persons besides myself, though Messrs. Badnall and Cheverton are not satisfied. I certainly do not purpose entering into the abstruse calculations the former gentleman adverts to in his two questions, and for which I have neither leisure nor inclination. I shall only state generally, that even supposing the total amount of friction to be the same on the curve and on the level, the accumulation of friction which will take place upon one-half of the ascent, will rack, and rapidly destroy either the engine or horses from which the power may be obtained. Neither shall I attempt to calculate the difference of the velocity on the curve and on the horizontal line, but content myself with remarking, that it is only by an increase of power that an increase of speed can be obtained. Does Mr. Badnall purpose using fixed engines on the summit levels to draw the carriages up the ascending curves? Before he puts upon me the onus of setting forth his fallacy, it would be but fair that he should give your readers an opportunity of knowing what it is that he really proposes to do, and wherein the advantage consists of the undulating surface over the level. I have taken some pains to acquire the information, but have not succeeded. You have been in the same predicament, and have evidently drawn the same conclusions as myself. Mr. Badnall seems sore with me: I regret it; I did not wish to hurt his feelings. I spoke of the railway, not with reference to persons, but to things. And my incredulity may certainly be excused, when it is considered that want of sufficient explanation, on the part of Mr. Badnall, has left me as well as others in the dark. I really should not be the last to hail with joy such a triumph of mind over matter as Mr. B. proposes, but I should like first to see it fairly made out beyond dispute.

Mr. Cheverton begins his letter by deprecating any intention of giving offence. It was needless—I am but a shadow, and as void of taking, as of intentionally giving offence, having no object in putting forth my ideas, such as they are, save the eliciting of truth, by which result I as well as others may hope to benefit. I say to all, strike and spare not, and, whenever culpable, I will bow to the chastening rod. Had I been an offence-taker, Mr C. has certainly hit upon the best mode of provoking it. He calls me a 'clever writer.' I had rather he called me a fool, since the latter may be an honest man, whereas the former commonly means a man who can argue like the 'lawyer' Mr. C. alludes to, on any side of a question, without caring for the truth. I may be an 'unpractised thinker,' of which allegation I leave your readers to judge, but I assuredly am not 'a writer,' in the literary meaning of the term; and as for cleverness, I should be sorry to have it proven upon me, as being the direct opposite to either wisdom or honesty.

With regard to the general effect of the railway in question, Mr. C. seems to hold the same incredulity as myself, though he would seem to know something more of the details than I do. How he came by his knowledge I cannot divine, inasmuch as he says, specifically, 'I cannot enter upon this point, as I have not investigated nor even seen the experiments.' Taking this acknowledgment into consideration, he would seem to speak with over confidence as to the '*facts*' of the experiments. I will not say, with his friend the engineer, that 'though I should see it I would not believe it,' but were I to see it, I should be suspicious of a trick in the first instance, and in the next, when satisfied that the thing was actually a fact, I should be disposed to think that the age of miracles had returned, and that the laws of nature were in one especial instance subverted. Mr. C. would seem to be rather 'superficial,' in expecting me to reason without data; and that I had no more data than yourself to go upon, I have already set forth. I could not set forth a fallacy. which had not been presented to me for examination.

With regard to the scheme of locomotion from summit to summit, by means of the pendulum, I shall not reason upon it as a mathematical proposition, but as a practical matter. A carriage, say of one ton weight, exclusive of wheels and axles, will require a certain power to draw it along a given level. This carriage would be upon four axles of the smallest diameter consistent with security. If it were taken off the four axles, and slung upon one axle, it would be found in practice that the single axle would require to possess four times the strength of each of the four, and the friction upon the increased diameter would consequently be in the same proportion. More than this, the suspending bars would be no slight addition to the total weight, and something extra must be allowed to the single axle on that acconnt. Therefore, taking into consideration the friction of the axle, slow though the motion be round the axle, the resistance of the air, the power required to move the carriage along the 'short roads,' the hanging and unhanging, the increased distance between the curve and the level, and the extra weight, I should say at once that the process would be less economical than that of the four-wheeled carriage on the level. There is no need of mathematical calculation to come to this result, and I cannot conceive the use of propounding abstruse mathematical calculation in a matter which, it is self-evident, can turn to no useful account. Mr. Cheverton will not set about pendulum locomotion in earnest, when he takes into consideration the expense of the lofty pillars required for the points of suspension, for the world is not yet ridged up into equal distances like a ploughed field. As for 'the proposition that all hindrance is provided against,' it is nothing more than a proposition that all friction shall be voted a bore; but so long as the bore continues to exist, so long will the pendulum locomotion remain an unprofitable speculation. When it shall be overcome, the only difficulty will be to chain up locomotive machines, to prevent them from doing damage by the exercise of their ruling passion—to move. Mr. C. asks me to show 'how and where the diminution of friction at any place or places along the curve would be compensated by an excess of friction in others.' The exact 'where,' I shall not attempt to shew; that it is so, I will endeavor to illustrate in a familiar manner. Let Mr. C. take a common carpenter's saw from the mould-loft, and screw it in a vice with the edge uppermost, parallel to the horizon; then let him traverse a roller along it in both directions, and he will find that the amount of friction will be considerably more from point to heel than from heel to point. The reason of this probably is, though I do not pronounce confidently, that the elasticity, both of the roller and the saw, exerts a greater force to overcome the friction in the latter case than in the former. The opposing points, in the former case, deaden the elasticity, and leave the friction to exert its whole force. Now, in running a carriage down hill, there is a very considerable quantity of elasticity brought into play; in some cases the friction is nearly all removed by the carriage actually bounding in the air, a fact which, as I have before remarked, caused, as I have been informed, the application of steel springs to coal-waggons. But after the carriage has descended with the velocity increased by the elasticity, it serves to impinge it with the greater force against the opposing points of the ascending curve, and the momentum is accordingly expended more rapidly than it was accumulated. As the ascent increases the friction increases also, and it is aided by the centre of gravity increasing its distance *behind* the point of contact. To state the matter shortly, the carriage runs down hill because the centre of gravity is *before* the points of contact; it will not run up hill, because the centre of gravity is *behind* the point of contact; and the elasticity which aids the downward momentum is absorbed on the ascent, in a ratio quicker than that of its generation, while no fresh elasticity can be generated, for the carriage in its ascent adheres closely to the track on which it moves. How Mr. Badnall purposes to apply his moving power I know not, but I apprehend that a steam-engine is not by any means improved by going at a very irregular pace; going down hill, scarcely any power would be needed—going up hill, an enormous power would be needed; and that horses are not the better for being unequally worked was sufficiently proved by the fact of the large expenditure of capital on the Highgate Archway.

Mr. Cheverton thinks it marvellous that carriage-builders should not be aware of the fact, that 'a plate of iron was stiffer placed on its edge than when flat.' Whether they are aware of the fact or not I do not pretend to pronounce. That it *is* a fact that some of them use their plates in an unscientific manner, he cannot doubt, when two of the guild, 'Phæton,' and 'A Carriage-maker,' have held differing opinions on it in the pages f your Magazine. Mr. C. is witty on my proposition to ballast carriages as ships are ballasted, yet wherein it is ridiculous I am at a loss to divine. He would scarcely propose to save weight in the use of the ship, by omitting the ballast altogether. This would be like the ape in the story, who

> 'To try conclusions, in the basket crept,
> And broke his own neck down.'

In the case of the carriage, the proposition was not the saving of weight, but the adjustment of the springs to the necessary tension for either one or more persons, and solely with a view to the greatest comfort of the riders. If it were merely desired to save weight, the springs should have been altogether omitted, If it be desired to procure the most perfect state of elasticity, conducing to the comfort of the riders, I should feel obliged if Mr. C. would point out any better mode than the one I have proposed. The better to illustrate what he has conceived the absurdity of my proposition, Mr. C. has introduced the story of the Spanish mule; but it has proved a failure, and has served to evidence two things against himself: first, that he has not studied the philosophy of mule loading; and, next, that he is guilty of the 'unpractised thinking' with which he charges me. Had the spirit of Mr. C. ever inhabited the body of a mule, after the fashion of the transmigration doctrine, or had he served any time as an *arriero*, he would know that the most essential thing to the orderly travelling of a loaded mule is, that the cargo should be as nearly equal in *weight* and *bulk* as possible, on either side the pack-saddle. A good mule will carry four hundred pounds weight, two hundred on a side. Now, were two hundred and fifty placed on one side and two hundred on the other, and the mule could speak, like Balaam's ass, he or she would say to Mr. Cheverton, supposing him to be the muleteer, 'Be so good as either to take away the odd fifty from my right side, or if that cannot be done, as the next best thing, add another fifty to the left side, because the heat of the pack-saddle and the cloths beneath it has stewed my hide almost to a jelly, and the unequal strain across my back-bone will burst it when the cargo begins to jolt.' Now, with an inanimate cargo there is sometimes a chance of reduction; but as Mr. C. laughs at the muleteer's plan in the case of the live cargo, he is bound to show what better plan he would have adopted, or forfeit his reputation as an engineer skilled in resources. Would he have eschewed the 'load of stones,' and then have gravely purposed to pare away the superfluous weight from the biggest traveller, after the Procrustean recipe? I suspect that the Andalusian knife, or the four-square blade of the *matador*, would have been brought forward in arrest of judgment. There is a saying amongst the mountain muleteers of some parts of Southern America, *La mula sabe raciocinar mejor que algunos Christianos*. The mule knows how to reason better than some Christians.

With regard to the repeating air-gun I proposed, Mr. C. has taken 'an incomplete and superficial view' of my letter. If he reads it again, he may discover that there was no proposition therein to 'multiply power by complication,' but simply the substitution of compressed air, which would not destroy the gun, instead of the steam and intense fire which does destroy the gun. The power is to be communicated to the air by means of the steam, because the steam itself cannot well be applied. *Voila tout!* Really Mr. C. would seem to be an 'unpractised thinker.' Ere he so triumphantly quoted my words, to the intent of my 'mere confusion,' as *Cloten* says in the play, it surely would have been but a very small portion of wisdom to endeavor to understand the tendency of the air-gun letter, notwithstanding the obscurity of my mode of writing.

Mr. C., at the conclusion of his letter, again hopes that his 'observations will be taken in good part.' They are so, and replied to in the same spirit, and I have to thank him in addition for having thus given me an opportunity to explain myself more fully.

I am, sir, yours, &c.

JUNIUS REDIVIVUS.

April 22, 1833.

*Mr. Badnall's Treatise on Railway Improvements, and in particular the Undulating Railway.** [From the London Mechanics' Magazine.]

The principal subject of the treatise before us is introduced by a preliminary exposition of the advantages of railway conveyance, and an examination of the obstacles to their immediate general establishment. Among these obstacles, the "difficulty of ascending inclined planes by locomotive power" occupies a foremost place. The employment of "stationary engines," or "locomotive engines with cog-wheels," to overcome this difficulty, is briefly adverted to, but justly pronounced to be attended "with serious if not insuperable inconveniences." Mr. Badnall's attention having been "particularly directed" to the discovery of some better remedy, the idea at length occurred to him that a sufficient power might be gained by the descent of a body down one inclined plane, to compensate for the opposition from gravity in ascending another; and if so, that a railway uniformly constructed in such an up and down, or undulating plan, might be economically substituted for the partly horizontal and partly inclined railways at present in use.

"The improvement occurred to me on the 7th of June, 1832. The impressions on my mind, before the trial of any experiments, were, that by an undulating railway a greater resistance would be opposed to the power of steam, or any other locomotive power, than upon a level railway; but that much would be gained by the power of gravity, multiplied by active power, down a descent; and that, consequently, a locomotive engine of any given power would travel at a greater speed, or drag a greater weight, than upon a horizontal railway. I was also of opinion that the increased resistance or fulcrum, offered by the descending part of each curve, and the advantage gained by the power of gravity multiplied by active power, would be sufficiently great to render locomotive engines more effective than they have at present proved to be upon inclined planes."—p. 31.

Mr. Badnall, after some explanatory remarks on the subject of friction and gravity, proceeds to describe the different experiments which have, in his opinion, fully established the soundness of these his preconceived opinions. Some of the more striking of these we shall here lay before our readers.

"I ordered a small engine to be manufactured, on clock-work principles, with a strong spring in a barrel, and a fusee sufficiently large to admit of travelling the length of 50 or 60 feet, being also particularly anxious that the power of the spring should be sufficient to overcome the pressure of the engine wheels on the plane, when kept from progressing. Wishing to try these experiments as privately as possible, during the time which the manufacture of the engine occupied, I was engaged at Douglass, in the Isle of Man, in superintending the making of two railways, the one curved, the other horizontal. These were each 32 feet in length (the length of the most spacious room I could find unoccupied); the length of the ascent and descent of each curve, or undulation, was *one foot*, and the height and depth of each curve from the centre was half an inch, or one inch from the summit of the convex to the base of the concave of the curve. I had also ordered a small carriage to be made, to be attached to the engine, when necessary, and to run upon four wheels of the same diameter as the wheels of the engine.

"On the 23d July I received the engine and carriage from Liverpool; their weights were as follows—Weight of engine, 9 lbs. 6 oz.: weight of carriage, 3 lbs. 10 oz.: diameter of wheels, 3 inches: width of the periphery of the wheels, ⅜ of an inch.

"On trying the strength of the spring, I was sorry to observe that it was not sufficient, when I placed the carriage on a smooth surface and prevented its progression, to turn the wheels; that is, it had not power, as I wished it to have, to overcome the adhesion, or friction, between the wheels of the carriage and the surface of the plane.

"I, however, resolved to try a series of experiments with it, and afterwards to return it to Liverpool, to have a stronger spring attached to it.

"Accordingly, I had the railways placed firmly down, and upon as exact a level as circumstances would permit. The distance between the lines on each railway was eight inches; the width at the surface of the rails was half an inch; the distance between the wheels of the engine governed, of course, the width between the lines; and care was taken to give the carriages sufficient play to prevent them being bound by friction against the sides of the rails.

"Having ascertained that both railways were level, the spring was wound up, by drawing the engine backwards from the end of the line to the commencement. It was started without any weight attached, and the following was the result: Curved railway, 6 seconds; horizontal railway, 7 seconds.

"I then placed 7 lbs. weight upon the engine itself, which had a platform for such purpose: the result was, curved railway, 8 seconds; horizontal railway, 9 seconds.

"I then attached the small carriage to the engine, and, without load, I found the speed of travelling along either line was in the same proportion as before.

"I then tried various weights in the carriage, and invariably found a decided advantage in the curved railway. This advantage was, however, more evident in the following experiments: With 17 lbs. weight in the carriage, from north to south, curved railway, 15½ seconds; horizontal railway, 20½ seconds. From south to north, curved railway, 17 seconds; horizontal railway, 22½ seconds.

"Now, omitting the half-seconds, and taking the averages, the difference of space which the engine would have travelled over on the curve, in the time required to travel 32 feet on the horizontal plane, is as follows—16 : 32 : : 21 : 42 feet; shewing a difference of nearly one-third in the speed.

"Thinking it probable that, by the variation in the time occupied in traversing the lines from different sides of the room, that they might not be perfectly level, I had them again examined and adjusted with particular caution; after which, on again trying with the same weight, viz. 17 lbs., the result was as follows: From north to south, and south to north, on the curve, 16 seconds; on the level, 22 seconds.

"This last experiment was repeately tried, and without any distinct variation; the time was ascertained by a second-hand watch, and carefully noted by Mr. J. L. Gardener, of Manchester, who witnessed the experiments, as well as myself.

"Although I perceived that 17 lbs. was as great a weight as the engine could well convey upon the horizontal railway, I was anxious to try the result of greater, and increased the load to 22 lbs. The result was, from north to south, on the curve, 17 seconds; on the horizontal line, 30 seconds. From south to north, on the curve, 18 seconds; on the horizontal, 28 seconds.

"It was here quite obvious, that the curve produced a far more decided advantage; and this advantage was evident at starting; as, on the horizontal road, the engine moved very slowly at first, and traversed 12 or 13 feet before it attained its average speed, whereas, upon the curved line, its motion was apparently regular throughout.

"Although these experiments were in every point of view so satisfactory in regard to speed, I was surprized to find that the advantage was not so great as I anticipated in regard to the difference of load the engine was capable of dragging on the two lines. I, however, clearly proved that we could convey a much greater weight upon the curve line than upon the plane; for when the engine would not move at all upon the horizontal road, it would travel without difficulty upon the curve; and it is extraordinary, that in conveying any weight from 15 lbs. upwards on the latter, the time occupied in doing so varied in a very trifling degree.

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* A Treatise on Railway Improvements, explanatory of the chief Difficulties and Inconveniences which at present attend the General Adoption of Railways, and the means by which these objections may be overcome; as proved by a Series of Interesting Experiments, &c. By RICHARD BADNALL, Esq. 142 pp. 8vo. Sherwood & Co.

"The same comparative results took place upon an inclined plane of 1 in 144."

A second undulating railway having been constructed, with a curve of five feet ascent and descent, and two inches in depth, and some alterations having been made in the engine, which made it both stronger and lighter, the following additional experiments were made:

	Number of Seconds.		
	Horiz. pl.	1 ft curv.	5 ft curv.
Engine alone, weighing 9 lbs. 4 oz. and the hind and fore wheels 5-16 inches apart, - - -	5	4	3½
Do. and carriage, weighing together 12 lbs. 14 oz. - - -	5¼	4½	4
Do. with 5 lbs. in carriage, -	6¾	5½	4¼
Do. with 10 do. do. - -	8¼	6¼	5¼
Do. with 15 do. do. - -	9¾	7	6
Do. with 20 do. do. - -	13¼	8¾	7½
Do. with 25 do. do. - -	18	11	9
Do. with 30 do. do. -	30 scarcely could go	14	11
Do. with 35 do. do. -	could not go	18	12
Do. with 40 do. do. -	-	-	13
Do. with 45 do. do. -	-	-	15

After repeatedly trying these experiments, and always obtaining the same results, Mr. Badnall had another railway constructed with *short* ascents and *long* descents:

"The length of each descent being 8 feet; the length of each ascent 2 feet; and the whole line being thirty-two feet. It consisted of three descents and three ascents, and a platform of one foot at each extremity, the tops of which were on an exact level with the summits of each ascent; the depth of descent at the lowest point being two inches from the highest rise, as in the railway whose curves were five feet. It is necessary to remark, that the descents in this railway, except about a foot from their lowest points, were regular inclined planes, curving off at the bottom, to render the ascents more regular, which ascents were also curved."

The following table exhibits the results of this modification of the undulating principle:

	Number of Seconds.						
	On the perfect level.				Inclination 1 in 42⅔.		
	Horizontal plane.	5 ft curve.	Long and short curv.	Weights.	Horizontal plane.	5 ft curve.	Long and short curv.
Engine alone	5	3½	4		6¾	5½	5½
Do. & carriage	5¼	4	5	lbs.	7¼	6	6
Do. with 5 lbs.	6¾	4¼	6	1	8¼	6¾	6½
Do. 10 "	8¼	5¼	7	2	9¼	7	7
Do. 15 "	9¾	6	7½	3	11	7¾	7½
Do. 20 "	13¼	7½	8	4	12	8½	7¾
Do. 25 "	18	9	8½	5	13¾	8¾	8
Do. 30 "	33	11	9	6	16¾	9½	8½
Do. 35 "	-	12	10	7	22	10	9¼
Do. 40 "	-	13	11	8	30	12	9¾
Do. 45 "	-	15	12	9	-	14	10½
Do. 56 "	-	-	14	10	-	-	11
Do. 58 "	-	-	14½	11	-	-	12
Do. 59 "	-	-	14¾	12	-	-	13
Do. 60 "	gr't difficulty		16	13	-	-	15½
				13½	-	-	16

Mr. Badnall states, that on trying the engine on this long and short curved railway, *the reverse way*, that is, by causing it to descend the short curve first, "the result was found to be the same."

It was observed in the course of the preceding experiments, that when heavy loads were passed over the railways, a considerable degree of vibration was occasioned. To get rid of this possible source of error, the different railways were next nailed firmly down upon three inch planks, and the following experiments made in the presence of Mr. Gill, of Manchester, one of the directors of the contemplated Manchester and Leeds Railway:

On a perfect level:

		Number of Seconds.		
		Horizontal plane.	5 ft curve, rise 1 in.	Irregular curve, rise 2 in.
Engine and carriage, without load,		5½	4¾	4¾
Do. do.	with 5 lbs.	6¾	6	6
Do. do.	10 "	8½	6¾	6¼
Do. do.	15 "	9¼	7¼	7½
Do. do.	20 "	11¼	8½	7¾
Do. do.	25 "	13¼	9¼	8¼
Do. do.	30 "	15¼	10	9
Do. do.	32½ "	18¼	10¼	9½
Do. do.	35 "	20	11	10½
Do. do.	37½ "	21½	11¼	10¼
Do. do.	40 "	23½	12	10¾
Do. do.	42½ "	29	12½	12
Do. do.	45 "	-	13¼	12½
Do. do.	50 "	-	16	12¾
Do. do.	55 "	-	19	17

Up an inclination of 1 in 96:

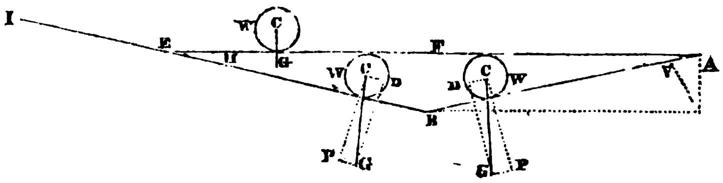
Engine and carriage, without load,		5½	4¾	4¾
Do. do	with 2½ lbs.	6¼	5¼	5¼
Do. do.	5 "	7½	6	6
Do. do	7½ "	8½	6¼	6½
Do. do	10 "	9	7¼	7
Do. do.	12½ "	11	8	7½
Do. do.	15 "	12½	8¾	8
Do. do.	17½ "	14	9½	9
Do. do.	20 "	15¾	11	10¼
Do. do.	22½ "	19	12	11
Do. do.	24 "	27	12¾	12
Do. do.	25 "	would not go	13	13
Do. do.	27½ "	-	16¼	16
Do. do.	29 "	-	18¾	17

It will be observed, that the degree of speed on all the railways is much greater in these experiments than in any of those before recited. Mr. B. accounts for this by stating, that "the cord upon the spring-barrel having broken, he was compelled to re-attach it, and regulate the power of the spring accordingly." Another circumstance that will strike the reader is, that, in the experiments before made, 30 lbs. was the utmost load which could be conveyed on the horizontal railway, while in the last set of experiments 42½ lbs. were conveyed. This difference Mr. B. attributes partly "to the renewed strength of the spring," and partly "to the freedom from vibration," obtained by making fast the railways to the three inch planks. A still more remarkable discrepancy, however, is that exhibited by the two curved railways in regard to speed, in the different sets of experiments. In the first trial, for example, made with the long and short curved railway on a level, the rates of speed with all weights under 20 lbs. were less, by 1" and 1½", than on the five feet curved railway; while in the last quoted experiments there was scarcely any perceptible difference. In the case of all weights, again, above 20 lbs., the advantage was, in the former experiments, on the side of the long and short curve railway, to the extent in some instances, of 3", while in the latter the advantage rarely exceeded 1", and in some instances only half a second. Mr. Badnall admits that these differences are not so susceptible as the others of explanation. "I confess myself in difficulty, and can only account for it by the difference in the vibration of the two railways, or some inaccuracy in levelling, especially as the depth of each curve was similar."

Be the difference, however, as it may, between the two sorts of curved railways, Mr. B. thinks he is entitled to rest satisfied with the fact, that they have both, "whether upon the level or inclines, invariably proved an unquestionable and decided superiority over the horizontal railway." He estimates this superiority as being equal to a saving of one half in point of time, and a gain of twice the power in respect of weight.

Mr. Badnall's theoretical explanation of the advantage thus gained is as follows:

"Suppose the line E A to be a horizontal railway,—A B to be a descending one,—and B E an ascending one, on which are placed the three wheels, W W W.



"1. Now, the amount of friction produced by the pressure of the wheel W on the plane E A, is in exact proportion to its weight, or to the weight of any vehicle which rests upon it; and upon such weight also depends the amount of attrition produced by the revolution of the the axle within the nave or cylinder in which it moves.

"The reason why the amount of friction, or attrition, is proportionate to the weight of the vehicle, is because (supposing C to be the axle or centre of the wheel) the perpendicular line C G is the line of gravity.

"On a horizontal railway, therefore, the amount of pressure upon the rails, and the amount of axle and rolling friction produced by that pressure, are in exact accordance with, and altogether dependent upon, the weight of the carriages and load; and when locomotive power is employed to overcome this pressure and friction, and when a maximum velocity is attained, such velocity (the power being kept up) is uniform through spaces and times, and such pressure or friction is an *uniformly opposing power*. Moreover, as before frequently observed, the amount of load which any locomotive engine will convey is in exact accordance with the amount of its pressure upon the rails and axles; or, in other words, with the axle and rolling friction.

"2. Let us now suppose the wheel W to be traversing from A to B. From the point A, it is evident that a body would fall to T, according to the laws of bodies falling perpendicularly; and if upon the line A B we draw the perpendicular line V T, a body would descend by gravity down the plane from A to V, in the same time as it would fall, perpendicularly, from A to T; and the power of gravity, which enables it to do this, acting *equally* (practically speaking) throughout the whole descent from A to B, would produce *an uniformly accelerated motion*; in consequence of which, on the arrival of the carriage at the point B, the velocity would (allowing for the difference of friction) be mathematically equal to what it would be at the point T, had it fallen perpendicularly from A to that point. Now, the extent of the power of gravity, or cause of the wheel W descending down the incline A B, will be easily comprehended by reference to the parallelogram D C P G: where the diagonal, C G, is the line of gravity, C P the line representing the amount of pressure on the rail, and C D the line of motion; that is, the line or power of gravity, C G, instead of acting perpendicularly, and with full intensity, on the rail, as on the line E A, becomes divided into two separate and distinct powers, viz. C D and C P; the latter, if I may so express myself, endeavoring to stop the progress of the wheel, and the former employing every effort to urge it forward; and as C D is to C P, so is the one power exactly to the other—and thus, if the carriage or wheel W weigh five tons, and if C D be one-fifth of the power or force, C P, the pressure upon the rails is reduced from five tons to four tons; and *not only reduced*, but the amount of power thus saved is actively employed in opposing the resistance offered by C P.

"Such would be the *commencement* of the progress of a carriage descending the incline A B by its own gravity, until, as before observed, on arriving at B, it would attain the same velocity as it would have attained at T, had it fallen perpendicularly from A to T; and if locomotive power were constantly employed to assist this force of gravity, the progress of a body down the descent would be the result of these united powers; the motion would be *uniformly accelerated*, and although the velocity would be increased in proportion to the increased power employed, yet the descent would be in proportionate accordance with the laws of falling bodies, both as to spaces and times.

"3. But we will now suppose the same carriage, W, to be propelled from a state of rest at B, to the position on the incline B E, described in the diagram. The angle F E B being equal to the angle F A B, and the line of gravity, C G, being drawn, the parallelogram C D G P is exactly equal to that described on the descending plane; consequently, C P is the line representing the amount of pressure on the rails, and C D the line of power opposing such pressure; from which it is evident that, unless prevented by some greater power than C D, the carriage would roll back to B, but if opposed by any regular and greater power, which we will call locomotive power, the carriage would rise gradually up the plane B E, with uniform velocity, and through equal spaces in equal times; for the power C D, which is a portion of the force of gravity represented by C G, *being opposed by a greater power* than itself, does not in this case act as *an uniformly retarding power*, but as *an uniformly opposing power*. It will also be seen that, throughout the ascent, the pressure upon the rails, and, consequently, the amount of friction, is precisely the same as it was down the descent A B, viz. as much less than it was on the horizontal E A, as the line C D to D G.

"4. But to prove the advantage to be derived by an undulating railway, we must not allow the carriage to stop at B; we will therefore suppose it to travel as far as it is able, by gravity alone, along the undulated line A B E.

"Now, as before observed, it would descend from A to B, according to the laws of falling bodies, at which point it will have attained its greatest speed, and, consequently, its greatest momentum, and it is evident that it will rise the ascent B E, as long as the force of momentum is greater than the force C D; but the instant such force of momentum, which in this case is *an uniform retarding force*, becomes less than the force C D, the latter would effectually operate, and the carriage W would roll back, and finally settle at the point B.

"Supposing, however, that the momentum gained by the descent to B be sufficient to advance the carriage as far up the ascent as the point H,—it is evident that, could sufficient power be *then* employed to overcome C D, the ascent H E would be made in much less time, with fewer revolutions of the wheels and axles, and with much less expense of power, than it would require to move up the whole ascent B E, as stated in position 3.

"We will now suppose that an assistant power, equal to the available power C D, be employed to propel the carriage W along the undulation A B E, and that such power were withdrawn at the point B,—it becomes evident that, as *gravity alone* enabled the carriage to rise the ascent as far as H, which is more than one-half of the whole ascent, now that double power is employed, double momentum at the point B will be the result; and the power C D will thus effectually be opposed up the whole ascent B E. If this be true, how much more effectually will the power C D be counteracted if the assistant power be continued up the whole ascent B E!

"From this reasoning, it appears to me indisputable, as decidedly proved by experiment, that not only can a given load be conveyed along a curved line in *very much less time* than upon a horizontal plane, or *a very much greater weight* in the same time, but that loads which no locomotive power could move on the horizontal plane E A, would, impelled by gravity, assisted by other active power, descend down A B, and rise the ascent B E with facility; and it will be also evident, that whatever power may be left on arriving at the point E, will be the power of ascending the further incline E I; to which surplus must of course be added the continued active power employed to oppose C D.

"5. It must be remarked, that although the disposable *power* of gravity in opposition to pressure is only as C D to C P, yet this is no criterion of the extent of advantage gained in speed; in fact, C D may as properly be stated to represent the saving in friction. In whatever light, however, it may be viewed, C D represents a *constant* and *equal* power throughout the whole descent; but the spaces passed over down that descent, in consequence of such power, are *not* equal in equal times, but, owing to accelerated velocity, as the squares of the times. Supposing, for instance, A V to be 10 yards, and the carriage was one second in reaching V, and allow the same space to be travelled over on the horizontal plane in the same time, at maximum velocity,—now, on the latter, the carriage would travel 30 yards in 3 seconds; but down A B it would travel 90 yards in 3 seconds; because 3 × 3 × 10 = 90; and this velocity, although retarding up the ascent, if assisted by an equal power to that employed on the horizontal plane, would be so kept up as to arrive at a given distance in far less time than it could be done with an average load on the horizontal plane. Supposing, for instance, the horizontal line E A were 175 yards long, the descent A B 90 yards, and the ascent B E 90 yards, making the undulating line 180 yards, and that locomotive power were employed sufficient to overcome the friction and the resistance of the atmosphere on both lines, and to move a carriage along E A at maximum velocity, 10 yards per second, it is obvious, that the time required to travel from E to A would be seventeen and a half seconds, because $\frac{175}{10} = 17\frac{1}{2}$.

"Let us now apply the same power to the same carriage travelling along the undulation A B E, and take 10 yards as the space travelled over in the first second down the descent A B, it is obvious that it would reach the point B, or, in other words, traverse the 90 yards represented by A B in 3 seconds; because, according to the laws of descending bodies, 3 × 3 × 10 = 90. This being admitted, and even presuming that the power employed upon the ascending part of the undulation, were *only just* sufficient to *overcome* the friction and resistance of the atmosphere, the carriage would naturally, as proved by the action of the pendulum, rise the ascent B E in the precise time it occupied in traversing from A to B. Hence, if a given power be employed, sufficient to overcome the friction and resistance of the atmosphere, and to impel a load 10 yards in the first second, upon an undulating line, such as A B E, 180 yards in length, the whole distance, if the power be constantly kept up, will be traversed in *less* than six seconds; whereas, if a given power be employed sufficient to overcome the friction and resistance of atmosphere, and to impel a load 10 yards in the first second of time, *at maximum velocity*, upon a horizontal line, such as E A, 175 yards in length, the whole distance cannot be traversed in less time than 17½ seconds. Thus, if we ascertain the maximum velocity at which a body can be impelled upon a horizontal line *in the first* second, and down the descending part of a given curve in the first second, such power being sufficient to overcome friction in both cases, the comparative time occupied in traversing each distance is easily determinable: the difference in advantage varying in proportion to the length and depth of undulation, as compared with the length of the horizontal line. Nor must it be overlooked, in considering this subject, that a much greater load can be conveyed along an undulating line than along a horizontal one. The axle and rolling friction to be overcome is necessarily less upon the former than upon the latter, and the fulcrum presented to the effective power of steam, down the descending part of each undulation, is a most important object of advantage. It will be seen, that in this explanation I have calculated the velocity of a body traversing a curve, according to the laws which would govern its descent down a regular inclined plane; there would of course be some difference, but in this instance it cannot be material to describe it."

In an appendix to the treatise, two letters are given from *Mr. Robert Stephenson, senior*, to Mr. Badnall, in which *Mr. S. fully admits the superiority of the undulating railway over the horizontal one*, and is at some pains to account for it on practical grounds. He concludes with expressing an opinion, that it "will require even a longer railway than the Liverpool and Manchester one, to prove the extent of its value."

To the Editor of the New York American:

Sir—I have heard gentlemen, who are unacquainted with Macadamized roads, say that they can*not* be, with propriety or economy, substituted for Paved streets. Being a young and modest man, as well as almost a stranger in this city, I do not desire to put myself in opposition to gentlemen of so much intelligence and character, but with your permission I will quote the language of one of the most experienced *road-makers* now living, who, by the by, was also once a resident of this city, and may therefore perhaps be the more entitled to credit--I refer, Sir, to John Loudon McAdams Esq. of Bristol in England. In reply to the question "have you in any instance tried the experiment of converting paved streets into roads?" put by one of the committee of the House of Commons, appointed to collect information upon the subject of road making—he said "I have in several instances taken up small pieces of pavement which I found upon the several road trusts, and substituted road. What has been the effect of the conversion of the pavement into roads? Answer. The expense has considerably diminished and the facility of travelling very considerably increased." He further says in relation to the mode of constructing roads, "the true principle of road-making is that the *road* should be considered as *an artificial flooring*, forming a strong smooth and solid surface, capable of carrying great weight, without obstruction to the wheels."—The road is to be made of *broken stone* without mixture of *earth, clay, chalk, or any other matter* which will *imbibe water, or* be *affected by frost.*

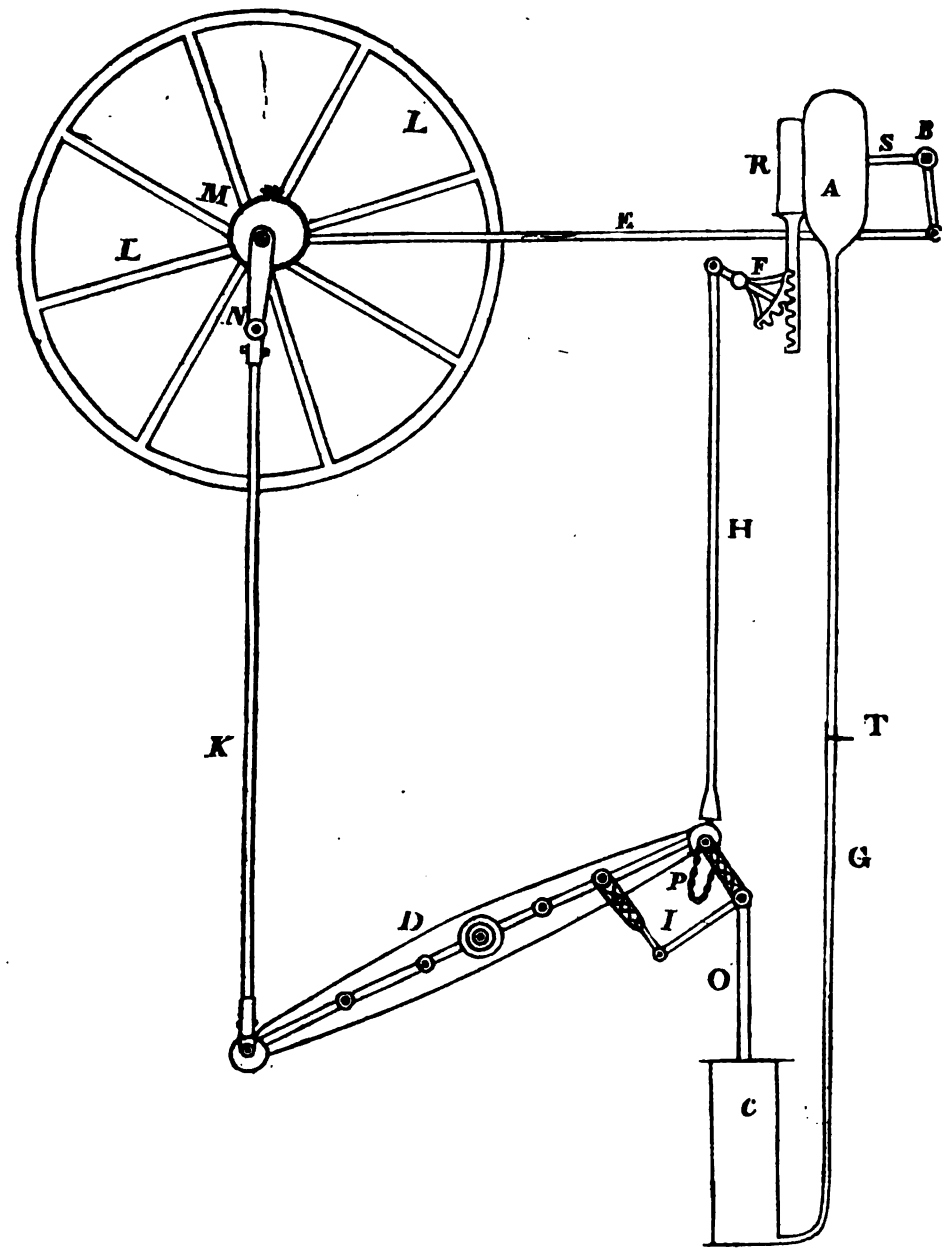
"Its form should be nearly flat: a rise of *three* inches from side to centre is sufficient in a width of 30 feet. The stone are to be broken so as *no piece* shall exceed *six ounces in weight.* The road bed is then to be put in shape, and a rake employed to smooth the surface. When the road is *so* prepared, the stone is to be *carefully* spread on it. This is rather a nice operation; and the future quality of the road will greatly depend on the manner in which it is performed. The stone must *not be laid on in shovels full*, but scattered over the surface, one shovel full following another, and spreading over a considerable space." Again he says, "Nothing is to be laid on the clean stone, on pretence of *binding.* Broken stone will combine by its own angles into a smooth, solid surface, which cannot be affected by vicissitudes of weather, or displaced by the action of wheels, which will pass over it without a jolt, and consequently without injury." Again, Sir, in his communication to the President of the Board of Agriculture of England, he says,—but I will omit what he says in that document until another time, as I am aware that *short* communications, upon almost any subject, are most likely to be read during the present busy season.

With your permission, therefore, Sir, I will endeavor to show, in another communication, wherein the present experiment in Broadway, although denominated a McAdamized street, differs widely from Mr. *McAdam's* system of road-making. M.

The steam engines are now in operation on the Camden and Amboy Rail Road. Passengers are conveyed to Philadelphia by this route, in seven hours.

We alluded a short time since to the successful trials of steam navigation made on the Chesapeake and Delaware Canal, which have been since so confirmed that it is expected that after this season steam power will altogether supercede that of horses, on the Canal. The boat used is 88 1-2 feet long on deck, 10 feet beam, and, draws 12 inches of water. Her boiler is 6 feet long by 3 feet in diameter; it is round and filled with tubes, the cylinder is 8 1-2 inches in diameter with a stroke piston of 2 1-2 feet. When running at a speed of 8 miles per hour, she consumes 314 lbs. of pine wood in that time, and at that speed the wash on the banks is only one-third of that made by the passenger barges when at the same speed.—[Philad. Chron.]

A steam-vessel of fifty-horse power has lately been launched at Vienna. This vessel is destined to navigate the Danube, and supply the capital with cattle from Hungary.



Suggestion for a New Motive Power. By G. N. To the Editor of the Mechanics' Magazine.

Sir,—As it is a professed object of your valuable Magazine to disseminate the knowledge of new discoveries, inventions, and improvements, I submit to your consideration the following description of a Hydro-pneumatic Engine, which, to me, is entirely original. In so doing I am not about to attribute to myself the discovery of any new principle, but think I can, with perfect confidence, lay claim to any advantages that may arise from a successful application of long known principles. It may not be improper here to remark, that, although I have not given it a *fair* trial, yet the experiment was enough to convince me of its success and utility as a motive power to most kinds of machinery.

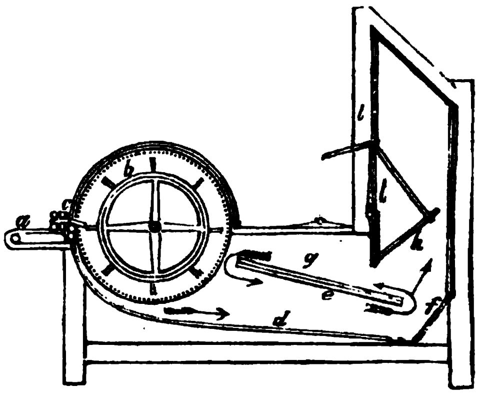
C is a strong cast iron cylinder, similar to that of a steam engine on the atmospheric plan, open at the top. G is a vertical pipe of small diameter, whose height cannot exceed 32 feet, joined to the cylinder C. O is a piston rod, attached to a piston packed in the usual manner. D is a working beam, attached by the parallel motion to the piston rod, O, at one extremity, and at the other to the shackle bar, K, which works the balance wheel, L, by the crank N. M is an eccentric. E is a connecting rod, worked by the eccentric M. A is an air-tight sphere, attached to the top of the vertical pipe G. H is a rod, which moves a slide in the chamber R, by the cogs at F. I is the parallel motion. P is a chain connecting the working beam and rod H. S is a pipe leading from an iron retort to the sphere A. B is a valve moved by the eccentric M, and rod E, the use of which will be hereafter explained.

The retort is furnished with a furnace for the forming of carbureted hydrogen gas, being filled with coal or other substances suitable for the purpose.

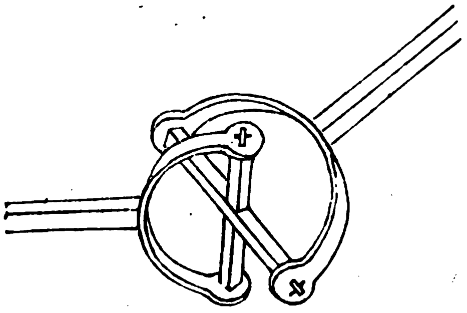
Having now explained the different parts of this engine, and their uses, I come now to the "modus operandi," the manner of setting it to work. Water is poured into the vertical pipe, G, till it elevates the piston on the principle of Bramah's Press. I must state here that there is a certain proportion existing between the vertical pipe, G, and cylinder, which must be found by actual experiment. The water should not be higher than the mark T, for instance, when the piston is elevated. Now, it is evident that the area of pipe above the mark T should be equal to the space below the piston, and the pipe should not exceed 32 feet in height, as before stated. As soon as the piston reaches the top of the cylinder, the working beam strikes the rod H, and shuts the slide in the chamber R, which was before open, rendering the sphere A air-tight. The next object is to depress the piston. The retort and pipe S being now filled with gas, an assistant fires the gas, and with a winch, for the purpose, turns the jet into the sphere A. The burning of the gas forms a vacuum: the water in the tube is raised, and the piston depressed. When the piston reaches the bottom of the cylinder, the chain P opens the valve at R, destroys the vacuum, and the water returning to its former position elevates the piston, strikes the rod, closes the slide. At the same instant the eccentric M throws in the jet of gas, a vacuum is re-produced. The machinery for throwing the gas in and out is very imperfect, and perhaps may not be clearly understood. The machinery here used is similar to that of Brown's Pneumatic Engine. I must refer the reader to a description of this engine in Nicholson's Operative Mechanic, where it is clearly explained. This engine might, perhaps, be improved by placing a cylinder at each extremity of the working beam. I think it may also be worked by mercury. But the engine must be much smaller in size; as mercury is twelve times heavier than water, the engine should be of such dimensions that its vertical pipe should not exceed 32 inches.

I shall be glad to see any remarks your readers may see fit to publish respecting the above. Yours, &c. G. N.

Method of Clearing Fur for Making Hats.—The preparation of hats is one of the principal uses to which fur is put in this country; we therefore select the present article for describing the mode of clearing the fur for that purpose. An account of the complete formation of a hat will be given in a future number. The patent improvements to which we are going to call the reader's attention are exhibited in the diagram beneath, and are intended to separate the finer portions of the fur from those that are less costly.



An endless web, or feeding cloth, is shown at *a*. It is extended on two rollers, upon which web the materials to be cleared and separated are placed, and by which they are carried forward into the machine. *b* is a hollow cylinder, with a flanch at each extremity. From the rims of these flanches a number of cords of catgut are extended and made tight. A peg or pin is so placed, the cords are put in vibration as they pass round, and thus take the material from the feeding cloth. To insure a requisite current of air for carrying the fur onward, vanes are placed in the cylinder *b*. The precise amount of current is determined by the regulator *e*, and the board *f*. The portions that are not sufficiently cleared are returned in the direction of the arrow towards *g*, while that which is completed goes out at *h*, and from thence into a large upper chamber.—[British Cyclopædia.]



Dr. Hook's Joints.—The various joints employed in the human frame are all of the most perfect kind, though they differ considerably in their structure. The mechanic has, however, copied but two, the *hinge*, and the *ball and socket*. The hinge-joint is used for doors, and those places generally which require motion but in one direction. The ball and socket, on the contrary, admits of a variety of positions. The expense attendant on constructing the latter is very considerable, and to obviate this inconvenience the *Hook's-joint*, represented in the accompanying engraving, may be employed. It was originally invented by Dr. Hook, and is found very useful in communicating a rotatory motion from the principal axis of a machine to the more distant wheels it is intended to put in operation.

It consists of two semicircles, joined by a metal cross; and, if either of the semicircles be turned, a similar motion is communicated to the other. The same species of universal joint is employed to support a compass at sea.—[British Cyclopædia.]

Ingenuity of the Spider. [Communicated for the New-York Farmer, and American Gardener's Magazine.]

Mr. Editor,—I have thought it might be interesting to your readers, and consequently to yourself, to read the following statement of a fact which came within my observation recently in Brooklyn.

On passing along one of my garden walks the other day, I discovered a spider's web constructed rather singularly. It was suspened from a cherry-tree, being attached to the trunk, and running out with numerous fastenings, at different distances, on a large limb, which rose at an angle of perhaps 30 degrees from the earth. This you may suppose would make the web of rather a narrow triangle, and one not likely to bring the proprietor much custom. To enlarge its sweep, however, the spider had, by some means or other, formed a corner downward, and suspended from it a little stone, say half an inch in length, three-eighths in width, and one-eighth in thickness, well secured in parachute style, and hanging some eight or ten inches below. This weight kept the web taut, and swung slightly as the wind affected it; and there it remained for several days. I had some curiosity to know more of the projector of this contrivance, and on casting my eye near the tree, where the thickening fabric indicated that he kept his counting-room, I discovered a spider with a body nearly spherical, and of the size of a small cherry, about half an inch through, with crab-legs, and in all respects appearing ready for business. I touched him slightly with a little stick, upon which he made a motion toward it so sudden and so impassioned as well nigh made me jump, at the same time striking the stick in such a manner that inclines me to think, had it been animated, it would have felt his venom.

I am ignorant of the branch of natural history, as well as of some others, and know not the class to which this spider may belong; nor whether this mode of securing a web may not have been frequently observed by others. But the case to me being new, I submit it to you, with the hope that it may elicit remarks from those who are better informed than myself on the subject.

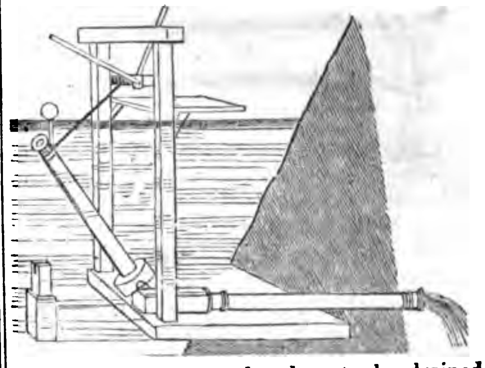
Ewbank's Patent Tinned Leaden Pipes.—We lately copied from a London paper a notice of a patent taken out in England by Messrs. Warner, for the manufacture of leaden pipes coated with tin. The invention struck us at the time as one of great value, and we have since learned with pleasure that it was made in this city: the Messrs. Warner having purchased the right for England of the inventor, Mr. Thos. Ewbank, of New-York, who has a patent for the United States.

It is well known to persons, who take pains to observe, as well as to the scientific, that leaden pipes are corroded by many of the fluids which pass through them, and that the small portion of acid which it often contains, in the course of time dissolves a perceptible quantity. Beer pipes made of this metal are often found deeply corroded; for the acetate of lead, which is a most poisonous chemical salt, is easily soluble, and is taken off by the fluid which aids in its formation. Mr. Ewbank's pipes are effectually guarded against this source of danger, by being lined within and without with pure tin. It is of great importance to know also that leaden vessels for culinary use may be protected from the action of acids in the same manner.

Patents, we understand, have been heretofore taken out in England, for coating lead with tin; but the processes rendered the expense too great, and they have been useless. Mr. Ewbank, on the contrary, is able to afford his pipes at a small advance only on the price of those made entirely of lead, which will greatly facilitate their general introduction.

Draining.—[We insert the following cuts and descriptions as subjects of reflection for farmers and mechanics. There is a wide field for mechanical ingenuity in rural pursuits.]

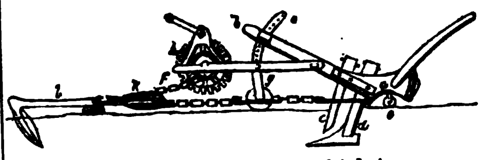
The inconvenience of an over-moist soil is but little felt in the neighborhood of the British metropolis. There are, however, many parts of England, in which draining becomes a most important desideratum. The first thing to be attended to is the elevation of the part to be drained: and as in large drains it becomes necessary to keep the channels themselves open, it is advisable to employ an apparatus similar to that represented in the annexed engraving, to accomplish this object.



Now, if we suppose the place to be drained situated in the neighborhood of the sea, it will not be advisable to admit a free communication at all times; but it requires a free passage of water at stated periods, for the purpose of cleansing the drain, and at different heights. The diagonal tube, supported by the rope coiled round the cylinder, may be readily placed at any required angle. When we wish the water in the drain not to exceed a certain height, we have only to regulate the winch accordingly.

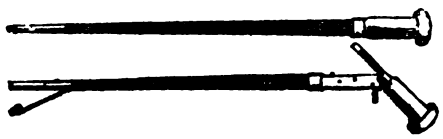
We have thus briefly noticed the drain on a large scale. A very simple mode of draining land, which is wet merely from the retentive nature of the soil, and which has been practised with success, consists in adding to the felly of a six-inch cart wheel, a piece of wood upon which is a triangular rim of iron. That side of the cart containing this prepared wheel, is then loaded, till the piece of iron indents the soil to the depth of six or eight inches. These furrows are made in lines from five to ten yards asunder, the grass is merely pressed down, but not destroyed, and they generally grow up in the course of the year. They should, therefore, be made annually, at the approach of winter; but the work is so easily executed, that a single person, with two old horses, will go over from ten to twenty acres in eight hours.

Draining Plough.—This is a very important agricultural implement, of which we give a diagram.



We may suppose a case in which its powers would be indispensable. It becomes necessary to cut a trench for the passage of water; and the furrow being too deep for the common process, the anchor or hook, *l*, is inserted in the ground. We have thus a fixed point for resisting the action of the pulley, *k*. If power be now applied to the handle at top, it communicates motion to the wheel, *h*, with an enormous increase of power, and the acting portions of the plough, *c d*, are forced through the soil. The arrangement at *a b c*, enables the conductor to give the required depth to the furrow. It will be obvious that the pulley, *g*, by resting on the ground, tends to diminish friction.—[British Cyclopædia.]

Schools for Mechanics, &c.—The king of Bavaria issued a rescript in February last, directing the establishment of this description of popular schools in every quarter of his dominions, with the benevolent intention of affording the humblest workman an opportunity of receiving such instruction as may fit him for his calling. He permits the districts to name the masters of these schools for his approval. In large towns the course of instruction will take a wider range, and be given in "Colleges of Industry."



Lambert's Cane Rifle.—This drawing represents the most compact and convenient rifle that we have ever seen, and we think has ever been invented.

The top figure represents it entirely shut, having the appearance of a substantial walking cane. In the under figure, it is represented ready for firing, in which position it can be placed almost instantaneously. The head is drawn out sufficiently far for the socket or ferule at the muzzle, (which is attached by a strap of metal in the side of the socket, with a hinge at the extremity,) to fall off by its own weight, (see drawing.) The cock is a bent lever of steel, made to turn and move on a hollow pivot pin, containing a chamber for powder, which is continued through the screw by which it is inserted, and opens into the barrel. The trigger lays in the plate which covers the lower side of the cock. By bending down the head of the cane (see drawing) the lower edge of the slide plate* catches a small dog of steel, with a notch or tooth in it, which rests on a spring let into the foot of the cock, and thus elevates the long arm of it. The head thus bent serves for a breech, by which the gun is conveniently held and aimed, by looking through a small slit in the cock over the sight in the ferule.

M. Guesney's New System of Philosophy.—Sir John Byerley has recently introduced into England a globe of a new and important character, invented by M. Guesney, an advocate of Coutances in Normandy, and described by him in a work entitled *Mouvement Heliaque*, Paris, 1825. Many of the more important phenomena of geology and physical geography have given birth to the wildest theories. M. G. being led to regard them as produced by the precession of the equinoxes, attempted their solution on scientific bases. Unfortunately M. G. is a sworn enemy of the Newtonian system, and while his whole theory is grounded on the precession of the equinoxes, he denies the cause of that precession, and affirms that the earth is perfectly spherical! His work abounds with errors quite as easy to refute, but he has the great and exclusive merit of having first had the idea of constructing a terrestrial globe in harmony with the celestial, by tracing the system of the ecliptic upon it as upon the celestial globe.

We may here observe, that the whole of the appearances in the heavens are to be referred to the two motions of the earth. The polar star is not polar to any planet but our own; and the poles of the ecliptic in the folds of Draco and in the Dorado are only so in reference to the earth. The axes of the world, as they are called, or those of the ecliptic and the equator, are two lines crossing each other *in the centre of the earth*, at an angle of 23° 28′, and extending to the heavens; but, we repeat it, they do not pass through the centres of any other planets; and are, therefore, to be referred to the earth alone.

The points where these lines pass through the surface of the earth are the poles on which its motions are performed, the movement of rotation, or diurnal motion, on the poles of the equator, and the movement of translation, or annual motion, on the poles of the ecliptic. M. Guesney's great difficulty was to fix the seat of the poles of the ecliptic on the terrestrial globe. In this he received no aid from astronomers, who declare the ecliptic to be a circle in the heavens, and to have no reference whatever to the earth, forgetting that, as the plane of the ecliptic passes through the centre of the earth, *it must cut its surface somewhere:* to determine those points, then, and consequently the poles of the terrestrial ecliptic, was the object of M. Guesney. He found that the magnetic needle and its dip were both directed to one point on the globe near the polar circle at the back of Iceland, precisely on the first meridian adopted by order of Louis XIII., passing through the island of Ferro. He found that, by supposing the seat of the pole of the ecliptic there, it gave a satisfactory solution of many hitherto inexplicable phenomena; he therefore fixed it there by approximation. Sir J. B. appears to be the only scientific person who has taken the trouble to sift the wheat from the chaff, and on this basis to erect a theory embracing the principal phenomena. Not, however, satisfied with approximation, where mathematical accuracy was evidently attainable, he endeavored to ascertain precisely the poles of the terrestrial ecliptic, when, fortunately, he found that Laplace, pursuing another object, had already solved the problem.

To avoid the confusion of every maritime nation using a different first meridian, Laplace wished them to take that "of which the midnight corresponds with the instant when the great axis of the ecliptic is perpendicular to the right line of intersection of the equator and ecliptic, which meridian is 166° 46′ 12″ east of Paris," or 169° 6′ 27″ east of Greenwich Observatory.

On the authority, therefore, of the greatest astronomer of any age, Sir J. B. has had a terrestrial globe prepared by Mr. Newton, with the system of the ecliptic described on the poles as fixed by Laplace; the north pole of the ecliptic being in the polar circle, and the winter solstitial colure, or first meridian, 10° 53′ 35″ west of Greenwich. A circle drawn from this pole as a centre, on a radius of 23° 28′, will pass through the pole of the earth, and trace its line of motion round the pole of the ecliptic, in 25,920 years.

This revolution of the pole of the equator round that of the ecliptic is admitted by all astronomers to take place in the *heavens*, but not in the earth. They admit, too, that the axis of the ecliptic is fixed and immovable, the ecliptic being so; but they have not yet shown how a right line intersecting another fixed right line at a given angle shall move round the latter at its extremity, and not at a given distance from the point of intersection! Assuming, then, that the pole of the equator revolves round the pole of the *terrestrial ecliptic*, it remains to show a few of the terrestrial effects of such motion.

By inspection of the globe, we find that the pole of the equator is now at nearly its greatest distance from western Europe; that it is advancing at the rate of about 394 yards annually on North America, and will pass through Lancaster Straits, Hudson Straits, over Resolution Isle, enter Europe at Cape Finisterre, pass over Bilbao and the northern frontier of Spain, through France over Toulouse, through Lombardy over Milan, through Germany over Vienna, and pass into Russia over Moscow, &c. &c. It is found that the solstitial colures are almost entirely in the ocean, cutting only a small portion of Western Africa, and a portion of Kamschatka, and proceeding without interruption until they meet the lower part of New-Zealand.

On inspecting the globe farther, we find that Kamschatka was at a given period within the tropics, which accounts for tropical fossils being found in the polar regions; and that the Oural Mountains were formerly in the latitude of Mexico, which explains why the precious metals are found in such high latitudes, and why the same precious stones are found in Mexico and the Oural Mountains. We find also that the direction of the straits in the higher latitudes run from west to east, or in the direction of the waters of the pole. The debris of mountains are found in the same direction in England, France, Italy, Scandinavia, &c. The plains of Lombardy are covered with Alpine debris, and in Scandinavia, masses of 50,000 tons have been transported, (Dr. Buckland fancies on the back of an iceberg,) by the immense force of the Polar Ocean.

The radius of the earth at the equator is about 65,000 feet greater than the polar radius, owing to the centrifugal force (which is as the radii of the parallels of latitude). And, as the pole moves through 46° 56′ of latitude in 12,960 years, in that lapse of time one part of the equator will be carried 46° 56′ into the southern hemisphere. At that period all western Europe will be buried under the waters of the pole (forming the period of a deluge), as it was at three distinct periods, at intervals of nearly 26,000 years; which ascertains the existence of the globe in its present state (which was probable its primitive) for 70,000 years. This change of the plane of the equator is probably the cause of all the great phenomena; it changes the latitude from polar to tropical regions, and thus renders a change in the action of the centrifugal force; and from whatever part the pole is receding, the centrifugal force is increasing, which produces an alteration of surface; in whatever place it is advancing there is a consequent depression. There is thus a daily tendency to elevation in some parts, and to depression in others; and to this cause Sir J. B. attributes earthquakes and volcanic action. According to this theory, as the elevation and depression must be greatest in the direction of the motion of the pole, so ought the degree of volcanic action to be. On inspecting the globe, we find this to be the case, and that volcanic action is greatest on the meridians of South America and the Philippine Isles. Where no elements of combustion exist we have eruptions of mud, &c.

The difference between the earth's radius at the equator and at 45° is 5,340 French toises, or about 33,000 English feet. Now, the equator changing its position nearly 47°, it follows that in the solstitial colure the present position of the equator will be depressed at least 33,000 feet. This will readily account for marine fossils being found in Chimborazo, 15,500 feet above the surface of the ocean.

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* By "slide plate" we mean a cylindrical metal plate of even diameter, about three inches in length, which is inserted in the head of the cane, and which encloses the lock when it is shut up.

The above is a brief outline of the system to which Sir John Byerley intends shortly to call the attention of the public. He courts inquiry; for, if the theory be well founded, it will entirely re-model the science of physical geography.—[British Cyclopædia.]

Babbage on the Economy of Manufactures.

[Continued from page 600.]

258. *Slide of Alpnach.*—Amongst the forests which flank many of the lofty mountains of Switzerland, some of the finest timber is found in positions almost inaccessible. The expense of roads, even if it were possible to make them in such situations, would prevent the inhabitants from deriving any advantages from these almost inexhaustible supplies. Placed by nature at a considerable elevation above the spot on which they are required, they are precisely in fit circumstances for the application of machinery; and the inhabitants constantly avail themselves of it, to enable the force of gravity to relieve them from some portion of their labor. The inclined planes which they have established in various forests, by which the timber has been sent down to the water-courses, must have excited the admiration of every traveller; and these slides, in addition to the merit of simplicity, have that of economy, as their construction requires scarcely any thing beyond the material which grows upon the spot. Of all these specimens of carpentry, the Slide of Alpnach was by far the most considerable, both from its great length and from the almost inaccessible position from which it descended. The following is the description of that work given in Gilbert's Annalen, 1819, and translated in the second volume of Brewster's Journal:

"For many centuries, the rugged flanks and the deep gorges of Mount Pilatus were covered with impenetrable forests. Lofty precipices encircled them on all sides. Even the daring hunters were scarcely able to reach them; and the inhabitants of the valley had never conceived the idea of disturbing them with the axe. These immense forests were therefore permitted to grow and to perish, without being of the least utility to man, till a foreigner, conducted into their wild recesses in the pursuit of the chamois, was struck with wonder at the sight, and directed the attention of several Swiss gentlemen to the extent and superiority of the timber. The most intelligent and skilful individuals, however. considered it quite impracticable to avail themselves of such inaccessible stores. It was not till November, 1816, that M. Rupp, and three Swiss gentlemen, entertaining more sanguine hopes, drew up the plan of a slide, founded on trigonometrical measurements. Having purchased a certain extent of the forests from the commune of Alpnach for 6,000 crowns, they began the construction of the slide, and completed it in the spring of 1818.

"The slide of Alpnach is formed entirely of about 25,000 large pine trees, deprived of their bark, and united together in a very ingenious manner, without the aid of iron. It occupied about 160 workmen during 18 months, and cost nearly 100,000 francs, or £4,250. It is about 3 leagues, or 44,000 English feet long, and terminates in the Lake of Lucerne. It has the form of a trough, about six feet broad, and from three to six feet deep. Its bottom is formed of three trees, the middle one of which has a groove cut out in the direction of its length, for receiving small rills of water, which are conducted into it from various places, for the purpose of diminishing the friction. The whole of the slide is sustained by about two thousand supports; and in many places it is attached, in a very ingenious manner, to the rugged precipices of granite.

"The direction of the slide is sometimes straight, and sometimes zig-zag, with an inclination of from ten to eighteen degrees. It is often carried along the sides of hills and the flanks of precipitous rocks, and sometimes passes over their summits. Occasionally it goes under ground, and at other times it is conducted over the deep gorges by scaffoldings 120 feet in height.

"The boldness which characterizes this work, the sagacity displayed in all its arrangements, and the skill of the engineer, have excited the wonder of every person who has seen it. Before any step could be taken in its erection, it was necessary to cut several thousand trees to obtain a passage through the impenetrable thickets; and, as the workmen advanced, men were posted at certain distances, in order to point out the road for their return, and to discover, in the gorges, the places where the piles of wood had been established. M. Rupp was himself obliged, more than once, to be suspended by cords, in order to descend precipices many hundred feet high; and in the first months of the undertaking, he was attacked with a violent fever, which deprived him of the power of superintending his workmen. Nothing, however, could diminish his invincible perseverance. He was carried every day to the mountain in a barrow, to direct the labors of the workmen, which was absolutely necessary, as he had scarcely two good carpenters among them all—the rest having been hired by accident, without any of the knowledge which such an undertaking required. M. Rupp had also to contend against the prejudices of the peasantry. He was supposed to have communion with the devil. He was charged with heresy, and every obstacle was thrown in the way of an enterprize which they regarded as absurd and impracticable. All these difficulties, however, were surmounted, and he had at last the satisfaction of observing the trees descend from the mountain with the rapidity of lightning. The larger pines, which were about a hundred feet long, and ten inches thick at their smaller extremity, ran through the space of *three leagues*, or nearly *nine miles, in two minutes and a half*, and during their descent they appeared to be only a few feet in length. The arrangements for this part of the operation were extremely simple. From the lower end of the slide to the upper end, where the trees were introduced, workmen were posted at regular distances, and as soon as every thing was ready, the workman at the lower end of the slide cried out to the one above him, "*Lachez*" (Let go). The cry was repeated from one to another, and reached the top of the slide in three minutes. The workman at the top of the slide then cried out to the one below him, "*Il vient*" (It comes), and the tree was instantly launched down the slide, preceded by the cry which was repeated from post to post. As soon as the tree had reached the bottom, and plunged into the lake, the cry of *Lachez* was repeated as before, and a new tree was launched in a similar manner. By these means a tree descended every five or six minutes, provided no accident happened to the slides, which sometimes took place, but which was instantly repaired when it did.

"In order to show the enormous force which the trees acquired from the great velocity of their descent, M. Rupp made arrangements for causing some of the trees to spring from the slide. They penetrated by their thickest extremities no less than from eighteen to twenty-four feet into the earth; and one of the trees having by accident struck against the other, it instantly cleft it through its whole length, as if it had been struck by lightning.

"After the trees had descended the slide, they were collected into rafts upon the lake, and conducted to Lucerne. From thence they descended the Reuss, then the Aar to near Brugg, afterwards to Waldshut by the Rhine, then to Basle, and even to the sea, when it was necessary.

"In order that none of the small wood might be lost, M. Rupp established in the forest large manufactories of charcoal. He erected magazines for preserving it when manufactured, and had made arrangements for the construction of barrels for the purpose of carrying it to the market. In winter, when the slide was covered with snow, the barrels were made to descend on a kind of sledge. The wood which was not fit for being carbonized, was heaped up and burnt, and the ashes packed up and carried away, during the winter.

"A few days before the author of the preceding account visited the slide, an inspector of the navy had come for the purpose of examining the quality of the timber. He declared that he had never seen any timber that was so strong, so fine, and of such a size; and he concluded an advantageous bargain for a thousand trees.

"Such is a brief account of a work undertaken and executed by a single individual, and which has excited a very high degree of interest in every part of Europe. We regret to add that this magnificent structure no longer exists, and that scarcely a trace of it is to be seen upon the flanks of Mount Pilatus. Political circumstances having taken away the principal source of the demand for timber, and no other market having been found, the operation of cutting and transporting the trees necessarily ceased."

Professor Playfair, who visited this singular slide, states that six minutes was the usual time occupied in the descent of a tree; but that, in wet weather, it reached the lake in three minutes.

259. One of the most common effects of the introduction of new machinery into manufactures, is to drive out of employment much of the hand-labor which was previously used. This, for a time, produces a considerable suffering amongst the working classes; and it is of great importance for their happiness that they should be aware of the effects, and that they should be enabled to foresee them at an early period, in order to diminish as much as possible their injurious results. It is almost the invariable consequence of such improvements, ultimately to cause a greater demand for labor; and often the new labor requires a higher degree of skill than the old: but, unfortunately, the class of persons who have been driven out of the old employment are not always qualified for the new one; and in all cases, a considerable time elapses before the whole of their labor is wanted. One very important inquiry which this subject presents is the question—*Whether it is for the interest of the working classes, that any improved machinery should be so perfect as to defy the competition of hand-labor, and that they should be at once driven out of the trade by it; or whether it is more advantageous for them to be gradually forced to quit the trade by the slow and successive advances of the machine?* The suffering which arises from a quick transition is undoubtedly more intense; but it is also much less permanent than that which results from the slower process. If the competition is perceived at once to be perfectly hopeless, the workman will at once set himself to learn a new department of his art. The use of power-looms is an instance of a slow change, which has gradually been diminishing the wages of the hand-weavers. It appears that the number of hand-looms in use in England and Scotland in 1830 was about 240,000; nearly the same number existed in the year 1820; whereas the number of power-looms which in 1820 was 14,000, had in 1830 increased to 55,000. When it is considered that each of these looms at that time did as much work as three hand-looms, the increased amount of work produced was equal to that of 123,000 hand-looms. During the whole of this period the wages and employment of hand-loom weavers has been very precarious.

260. Increased intelligence amongst the working classes may enable them to foresee some of those improvements which are likely for a time to affect the value of their labor; and the assistance of Savings Banks and Friendly Societies, (the advantages of which can never be too frequently, or too strongly, pressed upon their attention,) may be of some avail in remedying the evil: but it seems also desirable to suggest to them, that a diversity of employment amongst the members of one family, will tend, in some measure, to mitigate the privations which arise from fluctuation in the value of labor.

NEW-YORK AMERICAN.

SEPTEMBER 28, 30, OCTOBER 1, 2, 3, 4—1833.

LITERARY NOTICES.

Coplas de Don Jorge Manrique; translated from the Spanish, with an introductory essay on the moral and devotional poetry of Spain, by Henry W. Longfellow, Prof. of Mod. Lang. and Lit. in Bowdoin College: *Boston*, Allen & Ticknor.—We are almost disposed to speak of Prof. *Longfellow* as the Bowring of America—so great and various is his proficiency in modern languages, as evinced by several publications heretofore, and particularly by this now before us; in which his talents as a poet not less than those as a linguist are so advantageously displayed.

The little poem here translated was a tribute of filial affection and regret on the death of his father. *Don Jorge Manrique*, the author, flourished in the last half of the sixteenth century, and was, like "nearly all the Spanish poets of any eminence," a soldier. He fought beneath his father's banner, surviving his parent, but ultimately dying on the field of battle.

Preliminary to the poetical version of these stanzas, Prof. Longfellow has given an extremely well written introductory essay "on the moral and devotional poetry of Spain." We shall interest our readers in the whole essay we are persuaded, by the following extract from its close:

> The most prevailing characteristics of Spanish devotional poetry are warmth of imagination, and depth and sincerity of feeling. The conception is always striking and original, and when not degraded by dogmas, and the poor, puerile conceits arising from them, beautiful and sublime. This results from the frame and temperament of the mind, and is a general characteristic of the Spanish poets, not only in this department of songs, but in all the others. The very ardor of imagination, which, exercised upon minor themes, leads them into extravagance and hyperbole, when left to act in a higher and wider sphere, conducts them nearer and nearer to perfection. When imagination spreads its wings in the bright regions of devotional song,—in the pure empyrean,—judgment should direct its course, but there is no danger of its soaring too high. The heavenly land still lies beyond its utmost flight.—There are heights it cannot reach; there are fields of air, which tire its wing; there is a splendor which dazzles its vision;—for there is a glory, 'which eye hath not seen, nor ear heard, nor hath it entered into the heart of man to conceive.'
>
> But perhaps the greatest charm of the devotional poets of Spain is their sincerity. Most of them were ecclesiastics,—men who had in sober truth renounced the realities of this life, for hopes and promises of another. We are not to suppose that all who take holy orders are saints; but we should be still farther from believing that all are hypocrites. It would be even more absurd to suppose, that none are sincere in their professions, than that all are. Besides, with whatever feelings a man may enter the monastic life, there is something in its discipline and privations, which has a tendency to wean the mind from earth,—and to fix it upon Heaven. Doubtless many have seemingly renounced the world from motives of worldly aggrandizement; and others have renounced it, because it has renounced them. The former have carried with them to the cloister their earthly ambition, and the latter their dark misanthropy; and though many have daily kissed the cross, and yet grown hoary in iniquity, and shrived their souls that they might sin more gaily on,—yet solitude works miracles in the heart, and many who enter the cloister from worldly motives, find it a school wherein the soul may be trained to more holy purposes and desires. There is not half the corruption and hypocrisy within the convent's walls, that the church bears the shame of hiding in its bosom. Hermits may be holy men, though knaves have sometimes been hermits. Were they all hypocrites, who of old for their soul's sake exposed their naked bodies to the burning sun of Syria? Were they, who wandered houseless in the solitudes of Engaddi? Were they, who dwelt beneath the palm-trees by the Red Sea?—Oh, no! They were ignorant,—they were deluded,—they were fanatic,—but they were not hypocrites,—if their be any sincerity in human professions and human actions,—they were not hypocrites. During the middle ages, there was corruption in the church,—foul, shameful corruption; and now also hypocrisy may scourge itself in feigned repentance, and ambition hide its face beneath a hood; yet all is not therefore rottenness that wears a cowl! Many a pure spirit, through heavenlymindedness, and an ardent, though mistaken zeal, has fled from the temptations of the world to seek in solitude and self-communion, a closer walk with God. And not in vain. They have found the peace they sought. They have felt, indeed, what many profess to feel, but do not feel,—that they are strangers and sojourners here, travellers who are bound for their home in a far country. It is this feeling, which we speak of as giving a peculiar charm to the devotional poetry of Spain. We compare its spirit with the spirit which its authors have exhibited in their lives. They speak of having given up the world, and it is no poetical hyperbole;—they speak of longing to be free from the weakness of the flesh, that they may commence their conversation in Heaven, and we feel that they had already begun it in lives of penitence, meditation and prayer.

In the 29th and 30th stanzas, we find the original of the fine verses we had seen applied, without knowing whence they came, to our own Washington, beginning thus:—

> His was Octavian's prosperous star,
> The rush of Cæsar's conquering car,
> At battle's call; &c. &c.

We coincide entirely with Prof. Longfellow in the high estimation he expresses of this poem of Manrique's. Our readers will be led perhaps by the quotation below to concur with us in the opinion that what is admirable in the Spanish, is beautifully rendered into English:

XLI.	XLI.
Tú que por nuestra maldad, Tomaste forma civil Y baxo nombre, Tú que á tu Divinidad Juntaste cosa tan vil Como el hombre, Tú que tan grandes tormentos Sufriste sin resistancia En tu persona, No por mis merecimientos, Mas por tu suma clemencia Me perdona.	"O Thou, that for our sins didst take A human form, and humbly Thy home on earth; [make Thou, that to thy divinity A human nature didst ally By mortal birth,— [here, And in that form didst suffer Torment, and agony, and fear, So patiently; By thy redeeming grace alone, And not for merits of my own, O pardon me!"
XLII.	**XLII.**
Así con tal entender Todos sentidos humanos Conservados, Cercado de su muger, Y de sus hijos y hermanos Y criados; Dió el alma á quien se la dió, El qual la ponga en el cielo Y en su gloria: Y aunque la vida murió, Nos dexó harto consuelo Su memoria.	As thus the dying warrior prayed, Without one gathering mist or Upon his mind, [shade Encircled by his family, [eye Watched by affection's gentle So soft and kind, [rose;— His soul to Him, who gave it, God lead it to its long repose, Its glorious rest! [has set And though the warrior's sun Its light shall linger round us Bright, radiant, blest. [yet,

We must say a word in commendation of the beauty of the paper and typography of this little volume.

Poems by the Hon. Mrs. Norton. *Boston*, Allen & Ticknor.—Our columns have been too often graced by occasional poems from the pen of this lady, to render it necessary for us to say more now, than that in the collection of Poems here presented to us, we find the same grace, feeling, point, and polish, which distinguish her muse. We select one short piece, which may be admired for the truth of the moral it conveys, as much as for its poetical beauty.

THE CARELESS WORD.

A word is ringing thro' my brain,
It was not meant to give me pain;
It had no tone to bid it stay,
When other things had past away;
It had no meaning more than all
Which in an idle hour fall:
It was when *first* the sound I heard
A lightly uttered, careless word.

That word—oh! it doth haunt me now,
In scenes of joy, in scenes of woe;
By night, by day, in sun or shade,
With the half smile that gently played
Reproachfully, and gave the sound
Eternal power thro' life to wound.
There is no voice I ever heard,
So deeply fix'd as that one word.

When in the laughing crowd some tone,
Like those whose joyous sound is gone,
Strikes on my ear, I shrink—for then
The careless word comes back again.
When all alone I sit and gaze
Upon the cheerful home fire blaze,
Lo! freshly as when first 'twas heard,
Returns that lightly uttered word.

When dreams bring back the days of old,
With all that wishes could not hold;
And from my feverish couch I start
To press a shadow to my heart—
Amid its beating echoes, clear
That little word I seem to hear:
In vain I say, while it is heard,
Why weep?—'twas but a foolish word.

It comes—and with it come the tears,
The hopes, the joys of former years;
Forgotten smiles, forgotten looks,
Thick as dead leaves on autumn brooks,
And all as joyless, though they *were*
The brightest things life's spring could share.
Oh! would to God I ne'er had heard
That lightly uttered, careless word!

It was the first, the only one
Of those which lips for ever gone
Breathed in their love—which had for me
Rebuke of harshness at my glee:
And if those lips were here to say,
"Beloved, let it pass away,"
Ah! then, perchance—but I have heard
The last dear tone—the careless word!

Oh! ye who, meeting, sigh to part,
Whose words are treasures to some heart,
Deal gently, ere the dark days come,
When earth hath but for *one* a home;
Lest, musing o'er the past, like me,
They feel their hearts wrung bitterly,
And, heeding not what else they heard,
Dwell weeping on a careless word.

Letters of Horace Walpole to Sir Horace Mann, British Envoy at the Court of Tuscany; edited by Lord Dover, 2 vols. New York, G. Dearborn.—Great is the obligation that the lovers of that most captivating species of literature—which carries us as it were behind the scenes of the great tragi-comedy of life,—are under to Mr. Dearborn for the beautiful edition here presented to them of one of the most entertaining, and we may surely add, instructive works of this sort. We have through the English periodicals been enabled heretofore to lay before our readers such extracts from these letters as, while they will dispense us from the necessity of commenting upon the work now, will have had the effect, we are persuaded, of rendering them most anxious to possess the whole book. They will not regret its cost, either in time or money.

The Repealers, a Novel; by Lady Blessington. 2 vols. Philadelphia: Carey, Lea & Blanchard.—Our readers know Lady Blessington by her spirited sketches of, and conversations with, Lord Byron. This novel introduces her as a more elaborate writer. It is a fiction by an Irish lady, intended to promote, what so many here in this country are laboring to prejudice, the sense of reciprocal advantage derived both to England and Ireland from the Union. Lady Blessington, in her conversations, and sketches of the Irish, both in high and low life, seems not less spirited and successful, than in those above referred to, of Lord Byron; and upon the whole, this work must redound to her reputation as a writer.

The Invisible Gentleman, a Novel; by the Author of 'Chertley the Fatalist.' 2 vols. Philadelphia, E. L. Carey & A. Hart.—This novel depends for its interest on the faculty imparted to its chief character, of rendering himself invisible at pleasure by pulling his left ear! The dilemmas and scrapes into which the indulgence of this power lead him, and the occasionally ludicrous scenes which his sudden disappearance gives rise to, constitute the interest of the story. There is considerable skill evinced in delineating and individualizing characters, and in the general conduct of the story; and the moral, so far as the development of the plot goes to prove that happiness and reputation are not to be attained by any course at variance with the ordinary and established laws of nature,—is good.

History of Spain and Portugal, Vol. V—forming vol. 23 of Lardner's Cabinet Cyclopædia. *Philadelphia:* Carey, Lea & Blanchard.—This volume closes the history of the Peninsula, bringing down the narrative to the commencement of the French revolution. The motives for stopping at such an eventful period are stated to be, that the author had already exceeded his relative proportion for the historic part of such a collection as the Cabinet Cyclopedia; and moreover, that there were so many narratives of high authority of the important occurrences since that period in Spain, that he felt it the less necessary to prolong his work. Such as it is, we do not doubt this will become a very popular history.

Memoranda of a Residence at the Court of London, by Richard Rush. *Philadelphia:* Key & Biddle.—This is a second edition of an agreeable and honest work—written in the spirit of truth and fairness. The beauty of this edition is remarkable. We have rarely seen from any press a better executed book.

Voyages on the Coast of Africa; by Capt. Owen, R. N. 2 vols. Harpers.—These volumes embody a large amount of important information, and address themselves alike to the navigator and the man of science. They detail the particulars and results of a voyage undertaken by command of the British Board of Admiralty, in order to obtain accurate surveys of the Eastern Coast of Africa, and that of the Island of Madagascar. The two voyages occupied nearly four years, and the discoveries effected during them, relate to all the rivers, harbors, &c. along the immense regions traversed by Capt. Owen.

The work is very handsomely printed. *

Dramatic Scenes from Real Life, by Lady Morgan. 2 vols. Harpers.—It is pretty tough work for us with Lady Morgan. She has her admirers—warm ones and not a few—but though the persecution of the British Quarterly is a strong recommendation in her favor, still there are books which we would rather read than hers. In the first place, they are written in so many languages, that one is in danger of forgetting his own vernacular while tugging through the jargon of French, Spanish and Italian, with which she tesselates her English-Irish pages. And then, after you do slip and stumble through this stupendous polyglott conglomeration of phrases, you are half the time in the condition of a sportsman, who, after floundering over a dozen acres of rocks and brambles to get in the heart of a close cover, finds not a bird to reward him for his pains. We sicken too of Lady Morgan's "high life" affectations, and the absurd buffoonery she tries with such a strange want of tact to dignify into "elegant trifling." Nature made her a woman of vivid imagination, strong feelings, and unquestioned talents; and had she been born in the sphere whose tone she affects with such pertinacious vulgarity, or had her husband never exchanged his pestle and mortar for a coat of arms, and made her a knight's lady, she might, instead of wasting an excellent mind in trashy productions like that before us, have ranked next to Miss Edgeworth, as one of the first female writers of our century. Even in these volumes, which have more than the usual leaven of second hand pretension and egotism about them—(that sort of impertinence which English tourists pass off upon our countrymen for *ton*)—there are some bold and vigorous touches of character, which almost redeem every thing else. The characters of Mrs. Quigley and Mr. Galbraith, in the first sketch, are very well managed; and although we were nearly driven out of the volume by "an *exceedingly fashionable* footman, *armed* with an *elegant* horsewhip," we tolerated the coxcomb for the sake of an original and admirably drawn character of an Irish Priest, that soon after comes upon the scene. The entrance of this personage gives rise to some reflections upon the condition of Ireland, which would be worthy of a work of graver pretensions than that where they are found; and indeed if the reader is sufficiently inured to the polite jargon of what is called the English fashionable novel to overlook the absurd fillagree work with which Lady Morgan has interwoven "the tissue of her story," he may find, with many eloquent passages, a valuable residuum of information, so far as Irish society in all its phases is concerned, in the chief of these "Dramatic Sketches." *

The History of Charlemagne; by G. F. R. James, Esq. author of the 'History of Chivalry,' &c. The well-known author of 'Richelieu' and 'Philip Augustus,' was the man of all others to undertake a history of this kind. The antiquarian knowledge and research by which Mr. James is distinguished, united to his acute perception of character, and highly poetical cast of mind, qualify him especially for writing the biography of the great hero of the feudal ages; and he has consequently produced one of the most interesting, if not the most valuable works, which the Harpers have incorporated with their Family Library. We shall speak more particularly of this work hereafter. *

Martin Faber, *the Story of a Criminal*, 1 volume 18mo., Harpers.—An original American work of fancy is not so common among the light productions that weekly load our table, but that we read it with an interest which the re-publication of foreign books can hardly call forth. Martin Faber we have perused with close attention, and we do not hesitate to say, that since Godwin carried that singular and impressive style, first introduced in modern fiction by our countryman Charles Brockden Brown, to such perfection in Caleb Williams, no work of that school has come under our notice which shows more power than the little tale before us. The story is so brief that it is difficult to make an extract without giving an unfair insight into the whole book; but there is one scene so strongly wrought up in the best style of the authors with whom we have compared the author of Martin Faber, that we cannot withhold it from our readers.

The incidents are brought on by a parting interview, on the eve of his marriage with another, between the hero of the story and a girl whom he has ruined.—The wretched victim of his remorseless passions clings around her destroyer and beseeches him, with all the tenderness of a doting woman, to fulfil his vows and snatch her name, ere it be too late, from scorn and ignominy:

I stood even this appeal. My heart was steeled within me, and though I spoke to her less harshly, I spoke as hypocritically as ever. She saw through the thin veil which I had deemed it necessary to throw over my dishonesty, and a new expression took the place of tenderness in her features.

"It is all true then, as they have said," she exclaimed passionately. "Now, O God, do I feel my infirmity—now do I know my sin. And this is the creature I have loved—this is the thing—wanting in the heart to feel, and mean enough in soul to utter a falsehood and prevaricate—this is the creature for whom I have sacrificed my heart—for whom I have given up, hopelessly and haplessly, my own soul.—Oh, wretched fool—oh, miserable, most miserable folly. Yet think not," and as she turned upon me, she looked like the Priestess upon the tripod, influenced with inspiration—"Think not, mean traitor, as thou art—think not to triumph in thy farther seduction. Me thou hast destroyed,—I am thy victim, and I feel the doom already. But thou shalt go no farther in thy way. I will seek out this lady, for whose more attractive person, mine and my honor and affections, alike, are to be sacrificed. She shall hear from me all the truth. She shall know whether it be compatible with her honor and happiness, or the dignity of her character, to unite herself, in such bonds with a man who has proved so deadly, so dishonorable to her sex. And, oh, God"—she exclaimed, sinking fervently on her knee—"if it shall so happen that I save one such as I, from such a folly as mine, may it not expiate in thy sight, some portion of the sad offence of which I have been guilty."

She rose firmly and without a tear. Her eyes were red, her cheeks were burning with the fever of her whole frame, and she seemed, in all respects, the embodiment of a divine, a glorious inspiration. I was awed—I was alarmed. I had never before seen her exhibit any thing like daring or firmness of purpose. She was now the striking personification of both. She approached and sought to pass by me. I seized her hand. She withdrew it quickly and indignantly.

"Begone" she exclaimed—"I scorn, I despise you. Think not to keep me back. You have brought death and shame among my people in devoting me to both. You shall pollute me no more. Nay, speak not. No more falsehood, no more falsehood, for your own soul's sake. I would not that you should seem meaner in my sight, than you already are."

I seized her hand, and retained it by a fierce grasp.—

"Emily," I exclaimed, "what would you do—why is this? I ask but for delay, give me but a month, and all will be well—you shall then have what you ask—you shall then be satisfied."

"False—false! These assurances, sir, deceive me not—they deceive me no more. My hope is gone, forever gone, that you will do me justice. I see through your hypocrisy—I know all your villainy, and Constance Claiborne shall know it too. Ha! do you start when her name is but mentioned. Think you, I know it not all—know I not that you have been bought with money—that, vile and mercenary as you are, you have not only sold me, and this unborn pledge of your dishonesty and my dishonor, but you have sold yourself. Seek not to keep me back. She shall hear it all from these lips, that thenceafter shall forever more be silent."

She struggled to free herself from my grasp, and endeavored to pass by me with a desperate effort—her strength was opposed to mine, and in the heat of the struggle I forgot that victory in such a contest would be the heaviest shame. Yet, I only sought, at first, to arrest her progress. As I live, I had then no other object beyond. I did not intend violence, far less further crime. But the fate was upon me; —she persisted in her design, and in the effort to prevent her passage, I hurled her to the ground I paused, in a deadly stupor, after this. I was no longer a reasoning—a conscious being. She looked up to me imploringly—the desperate feeling which had heretofore nerved and strengthened her, seemed utterly to have departed. The tears were in her eyes, and, at that moment, she would have obeyed as I commanded—she would have yielded to all my requisitions—she would have been my slave. She met no answering gentleness in my eyes, and with a chocking and vain effort at speech, she turned her face despairingly upon the still dewy grass, and sobbed, as if the strings of the heart were breaking in unison with each convulsion of her breast. At that moment, I know not what demon possessed me. There was a dead a more than customary silence in all things around me. I felt a fury within me—a clamorous anxiety about my heart—a knawing something that would not sleep; and could not be silent; and, without a thought of what I was to do, or what had been done, I knelt down beside her. My eyes wandered wildly around the forest, but at length, invariably, settled, in the end, upon her. There was an instinct in all this. She had the look of an enemy to the secret and impelling nature within me, and, without uttering a single word, my fingers, with an infernal gripe were upon her throat. She could not now doubt the desperate character of my design, yet did she not struggle—but her eyes, they spoke, and such a language! A chain which I myself had thrown about her neck—that neck all symmetry and whiteness—was in my way. I sought, but vainly, to tear it apart with my hands, and could only do so—with my teeth. In stooping to do this, she writhed her head round and lifted her lips to mine. I shrunk, as from the fang of a serpent. They had a worse sting, at that moment, in my eyes. Mournfully, as she saw this, she implored my mercy.—

"Spare, forgive, dearest Martin, I will never vex you again—spare me this time, and I will be silent. Kill me not—kill me not"—more wildly she exclaimed as my grasp became more painful—"I am too young to die—I am too bad to perish in my sins. Spare me—spare me. I will not accuse you—I—God! Oh, God!"—and she was dead—dead beneath my hands!

This is certainly finely dramatic. The painter of such a scene has literary talents of no common order. There is another passage which, as forming an admirable sequel to this, we must here add:

I have already said, the bride was beautiful. Words cannot convey an idea of her beauty. She was emphatically a thing of light and love—

"Which seen, becomes a part of sight"

In grace, one knew not with what, save herself, to institute a comparison. In expression, there were volumes of romantic, and interesting poetry, embodied in each feature of her face; and the steel of my affections, stern as it was, wherever she turned, even as the dutiful needle to the pole, turned intuitively along with her. Such was the maiden,—so much after the make and mould of heaven, whom a cruel destiny was about to link with one formed in spirit after the fashion of hell.

The ceremony was begun. We stood up with linked hands at the altar. The priest went on with his formula. The bride's hand trembled in mine, and her eyes were commercing only with the richly carpeted floor. I was about to answer the question which should have made us one, when a cold wind seemed to encircle my body. My bones were numbed, and a freezing chill went through my whole system. My tongue refused its office, and, instinctively, as it were, bending to the opposite quarter of the apartment, my eyes fell upon a guest whom none had invited. There, palpable as when I had last seen her, stood the form of Emily Andrews. A pale and melancholy picture, and full of terrible reproach. I was dumb, and for a moment, had eyes only for her. She was motionless, as when I had borne her to the unhallowed grave in which she did not rest. I felt that all eyes were upon me—the bride's hand was slowly withdrawn from mine, and that motion restored me. Mine were terrible energies. I seized her hand with a strong effort, and with a voice of the sternest emphasis, my eye firmly fixed upon the obtrusive phantom, I gave the required affirmative. With the word, the figure was gone.—I had conquered. You will tell me, as philosophers have long since told us, that this was all the work of imagination—a diseased and excited fancy. and in this you are probably right. But what of that? *Is it less a matter of supernatural contrivance, that one's own spirit should be made to conjure up the spectres which haunt and harrow it, than that the dead should actually be made to embody themselves, as in life, for the same Providence?* The warning sound that chatters in my ear of approaching death may be, in fact, unuttered; but if my spirit, by an overruling fate, is calculated for the inception of such a sound, shall we hold it as less the work of a superior agency? Is it less an omen for that?

This was not all. At midnight, as I approached my chamber, the same ghastly spectre stood at the door as if to guard it against my entrance. For a moment I paused and faltered; but thought came to my relief. I knew that the energies of soul, immortal and from the highest as they are, were paramount, and I advanced. I stretched forth my hand to the key, and all was vacancy again before me. If my fancies conceived the ghost, my own energies were adequate to its control. In this I had achieved a new conquest, and my pride was proportionately increased and strengthened. I was thus taught how much was in my own power, in making even destiny subservient to my will!

With these specimens of the work, which speak for themselves, we have nothing further to add of the unpretending but admirable little story of Martin Faber, except that the moral of the tale, which impresses the necessity of proper and early *education*, is excellent. How just are the author's ideas of education, his own book tells us in these words:

When the author speaks of education he does not so much refer to that received at the school and the academy. He would be understood to indicate that which the young acquire at home under the parental eye—in the domestic circle—at the family fireside, from those, who, by nature, are best calculated to lay the guiding and the governing principles. It is not at the university that the affections and the moral faculties are to be tutored. The heart, and—*les petites morales*— the manners, have quite another school and other teachers, all of which are but too little considered by the guardians of the young. These are—the father and the mother and the friends—the play-mates and the play-places.

We may seem to have already bestowed too much space upon a book that purports to be meant only "for the use of children;" but a writer of such approved discernment, as is evinced in the passage last quoted, must well know the ill effects of letting one's own powers lie idle; and will therefore enter into our views, when we express our unfeigned wish to hear soon again from the author of Martin Faber. *

Tales of the Caravanserai: by the Author of the 'Kuzzilbash,' 1 vol. Harpers.—Every novel-reader remembers the *Kuzzilbash*. It was one of the best works illustrative of men and manners in the East, since Hope's Anastasius, but more full of striking incidents than even that most interesting book. The present work of Mr. Fraser will, we think, sustain his reputation as one of the most successful and popular writers of the day. The materials are of the same description as the Kuzzilbash, and they are wrought up with the same talent which characterized that animated picture of wild encounters, and barbaric pageants, in half savage lands; changing as it did from the gardens of the harem, or the chambers of the *underoon* itself, to the sand-hills of the Desert, and the tents of its wandering inhabitants.

——The present volume, entitled the Khan's Story, is but the first of a series which may be expected from Mr. Fraser, under the general title of Tales of the Caravansarai—the plan of the work being to bring a number of oriental characters together in one of these Asiatic hostelries in the midst of the Desert; and after abutting them up with a snow-storm which renders the roads, if they may be so so called, impassable for some weeks, to set each one present relating a story after the true Eastern fashion of beguiling time. The conception is a good one, and unless it be Mr. Morier, the ingenious author of Hajii Baba, we know of no living writer more capable of making it a most valuable medium for conveying just views of Eastern life and story, than he who has here undertaken it. *

SUMMARY.

James Fennimore Cooper, who, with his family, intended to embark in the Erie, finding the accommodations pre-engaged, went over to England, and will probably reach here by the next Liverpool or London packet.

The St. Louis.—Extract of a letter from Natchez, dated the 10th inst.—"The St. Louis, Story, has arrived after a quick and excellent passage. She was towed up by the steamboat Whale, from New-Orleans, and was only 48 hours coming up, a distance of 300 miles. She was received here yesterday afternoon amidst the shouts and acclamations of the citizens.—The St. Louis commenced discharging this morning."

We learn from the Galenian, that all the difficulties with the neighboring savage tribes are at an end. The Winnebagoes have crossed the Wisconsin River, and the vanquished Sacs and Foxes appear quite humble and disposed for peace. A treaty is to be held about the 10th instant, with the Potawatomies, a tribe of Indians inhabiting the borders of Lake Michigan, when it is expected that all the Indian title to the lands between the Mississippi river and the Lake will be purchased by government.

Gold in New England.—It appears by an article in Silliman's Journal, that Gold has been found in the southern part of the state of Vermont. The gold of the southern states and of Mexico is found in talcose rocks, and it was thought it would also be found in rocks of the same description in New England.

The search thus far has been successful. The Boston Globe states that gold was found dispersed over several hundred acres of this soil; about three penny weights of fine gold was obtained from a bushel of dirt collected in different places.

The U. S. Gazette fills out a column with the following distich, in which there is truth, if not poetry:

"There is nothing in life so shocking
As a fine girl with a hole in her stocking"

Bears.—It is scarcely in the recollection of the oldest inhabitants that so large a number of these animals have been killed and seen in this District. Probably not less than 30 to 40 have been sold in our markets in the last month and as many more killed. Two or three persons have had narrow escapes in encounters with them, and about two weeks ago a person was said to have been devoured by them. The following account as regards the parish of St. Joachim, 25 miles below Quebec, is furnished on good authority:—"A gentleman from St. Joachim mentions that no less than twelve Bears have been killed in that Parish within the last thirty days. These animals were were uncommonly lean and voracious. Most of them were destroyed by fire arms or taken in snares. In one instance however, he states that a large bear came boldly upon a man who was working in a field with a scythe—a struggle took place and the man was badly wounded in the hand and would probably have perished had not his brother come to his assistance, who contrived to trip up and finally to despatch the Bear with a scythe. The animal did not relinquish his grasp of his intended victim until he was completely exhausted by the loss of blood.—[Quebec Gaz.]

A letter from Charleston states, that owing to the recent high tides, which broke the banks, the rice planters on Cooper River, after their rice had been stacked had great part of their crop washed away.

[*From the Baltimore Patriot of Wednesday, P. M.*]

We learn that McClintock Young, Esq. of Baltimore, has been appointed Chief Clerk of the Treasury Department—and current rumor assigns the office of Navy Agent for this port to Col. John Thomas.

The D—l among the Tailors.—The following notification from the Virginia Penitentiary has caused great uproar among the tailors in Richmond. The other crafts have also taken up the subject, and a public meeting was called to consider of what steps it was expedient to take.

Tailoring in the Penitentiary.—The above branch of labor, for some years past restricted to demands of the Commonwealth, was by act of the last Legislature, placed on a footing with other mechanics in the institution, and is now open to individual orders, which will be executed neatly, faithfully, and with despatch, at the following prices:

Making a cloth frock or close coat,	$3 50
Do. domestic do.	2 to 2 50
Do. cloth or cassimere pantaloons,	1 25
Do. domestic do.	1 00
Do. vests, rolling collar or double breast,	1 50
Do. do, plain,	1 00

We do not wonder at the excitement upon this subject; for we cannot but think it an unjust interference with honest labor, that rogues and felons who are kept by the State, should be permitted to undermine its fair profits. The result of such a scheme is to make the whole expense of reforming and punishing criminals fall upon those mechanics whose branches of business are pursued in Prisons and Penitentiaries. If trades must be given to rogues, let it not be at the expense of honest men; and above all let not that be called economy, which ruins the upright and industrious mechanic in order that it may be proved that criminals in prison can be made to pay their own expenses. It would be both cheaper and juster, to levy a general tax for the support of prisons, and to employ the labor of its inmates in destroying one day what it created the day before, rather than to undersell, as is now done, the produce of honest labor.

Rights of the Press.—An argument of several days has been held before the Mayor of Philadelphia, on a motion in a criminal proceeding that the reporters be prohibited from publishing the testimony pending the trial. The Mayor decided, with entire reason as it seems to us, against the prohibition.

Indian Affairs.—The annexed article of intelligence respecting the remains of the Six Nations, yet residing in the western part of this State, is from the Buffalo Patriot of Tuesday. It will be seen that we have now two "*Regencies*" in this State—that of Albany, and that of the Senecas:

"At the Grand Council of the Chiefs and Warriers of the Six Nations, now in session near this city, a grandson of the celebrated Indian Chief Red Jacket, two years old, has been elected Chief. This has been done in honor to the memory of that distinguished Chief. A Regent has also been appointed to act for him during his minority.

"The Council have not, as yet, decided on the important proposition submitted to the Indians, relative to the purchasing of their lands in this State, and their removal to Green Bay; but it is evident, judging from the angry discussion and division among them, that they will not accede to the wishes of the government, nor will they even send a delegate to the west.

Yesterday, a grand Ball match was played by the Seneca, Allegany, Cattaraugus tribes, against the Oneidas, Tonewandas, and Onondagas, for about $400 in goods and money, which resulted in favor of the Senecas. We understand that another trial of their skill will be had this afternoon, on a large plain one mile above Sackett's Tavern.

It is no very novel thing to see fruit trees blossom a second time in one year, but a second crop of fruit from the same tree in one season, is a novelty which the garden of Mr. W. Bowen, in Buckshuten, West Jersey County, can alone exhibit. And what is most surprizing, the apples are as large as those of the early season.—[Philad. Chron.]

Agricultural Thrift.—Gen. James Shelby, of this county, sold a few days since, a flock of 160 mules, raised on his plantation, for the sum of $11,840 cash in hand. Fourteen of these mules were purchased by the agent of a gentleman of Cuba, and were sold for $130 each, making an aggregate $1,820 for the 14.—[Lexington (Ky.) Intell. of 24th ult.]

Orders have beee issued at the Quebec Custom House, that the Dollar is hereafter to be received at 4s. 4d. sterling, instead of 4s. 6d.

Several mercantile houses, says the Daily Advertiser, have failed at Quebec, and the claims against them will amount to between 60 and £70,000. There has also been a failure at Montreal and another at Kingston, which has had the effect of creating a want of confidence in that community.

The extensive furnace of Gosfield, in Upper Canada, has been totally consumed by fire. The melting ore was discharged upward, fell upon the roof and set fire to the building.

Good.—It is said that an actor who has recently arrived in this country with the intention of travelling, in addition to his professional occupation, finding that the proceeds of his book would be convenient for expenses, wrote the history of his journeys and the result of his observations beforehand, and took the money from the publisher for the copy-right.—[Jour. of Com.]

[*From the Baltimore Chronicle.*]

Journal of Mr. Durant's Aerial Voyage.—The Balloon was unmoored at 5 hours 27 minutes, the barometer standing at 29 42, and the thermometer 80. In a short time let go the Rabbit, and saw it land safely. At 5 h. 35 was over a road, and thought of descending, but kept on. At 5 h. 46 was within hailing distance of the earth, and conversed with several men; understood them to say the distance to Baltimore was 4 miles; understood their names to be Thomas and Philip Burgan. At 5 h. 50 was within hailing distance again, and conversed with several persons—understood them to say, Baltimore was distant 7 miles. On inquiring the name of the first town, in the direction I was going, understood them to say Abington, and afterwards Bel Air. At 5 h. 55, saw the Sun set and heard report of 2 guns; judged the sound came from W. by N.—About 3 minutes previous to which, tried an experiment for a gentleman in this city, which, if it proves successful, will be given to the world. At 6 h. 8, barom. 28,02, therm. 72, I was suspended over Gunpowder River. At 6h. 9, conversed with an inhabitant, understood his name to be Mr. Carroll, and the name of place Perry Hall—understood the name of another gentleman to be Isaac Holland, who was very communicative; he informed me I was 13 miles from Baltimore, and the next town was Bel Air—and desired I would not forget his name. At 6h. 16, again conversed; understood Bel Air was distant 5 miles. Felt anxious to see the town having heard a good account of it before starting, by persons who told me I should go in that direction. At 6 h. 32, barom. stood at 24,43, therm. 62. At 6h. 53, both anchors grappled with the earth about 200 feet from the Court House in Bel Air. About 200 persons immediately ran up, and politely proffered help, evincing a great desire to assist me. I remained suspended about one hundred feet, until towed by them to a clear field in the middle of the town; at 6h. 44, the car touched the earth. At 6h. 53, I stepped from the car. At 7h. 12, every thing was secured—packed up and taken to Mr. Richardson's Hotel, where I was politely received and entertained. Among the gentlemen who assisted me to alight were Benjamin Bond, Henry Richardson, Major W. Richardson, Doctor Augustus Bond, Doctor Munikhuysen, Colonel H. Dorsey, Colonel I. D. Maulsby, Joseph Robinson, Major Bradford, Mr. Dimmitt and Ralph S. Lee. The persons over whose farms I had passed, also came up with alacrity. I must not omit to mention the attention of the ladies in taking charge of my barometer, &c. Tea was soon prepared, and I partook heartily, having tasted nothing since half past seven o'clock, A. M. The tea table was graced with the presence of a large number of ladies, and my satisfaction was heightened by the presence and attention of the Rev. R.H. Davis, and Mr. Charbonnier. After tea, we called on Colonel H. Dorsey, where a bottle of very superior old wine was produced, he having promised it to his friends in case the balloon should descend in the village. In the morning, I breakfasted by invitation with Mr. Robinson, Postmaster. I was here waited on by Mr. Kenny, deputed by the ladies of the lower part of the town, to express their thanks for having selected their village as the place of descent. A number of ladies called, personally, and were each presented with a flower from the decoration of the car.

Left Bel-Air 9 h. 20, and was escorted by a cavalcade of gentlemen to the county line; the cavalcade was composed of Col. Maulsby, Mr. Boulden, Mr. Elliott, Mr. McKenney, Mr. Furry, Mr. Jones, W. P. Maulsby, Mr. Davis, Dr. Bond, and Dr. Munnihuysen. Arrived at Barnum's at half past 3 P. M. I should have mentioned that Mr. Richardson sent me to Baltimore in his gig, for which, as well as for my entertainment, he would receive no remuneration.

In conclusion, I beg leave to present my thanks thus publicly to those gentlemen of the city who kindly afforded me their aid in the preparations for the ascent at the Garden, and especially to acknowledge with a sense of obligation the courtesy which has been extended to me by the citizens generally in all my preparations and arrangements. At Bel-Air no less civility and kindness were afforded me on alighting there and in returning to the city. Nothing of personal attention has been wanting any where to make the ascent and the descent agreeable to my feelings.

C. F. Durant.

The following is the amount of the valuation of real and personal estate, as made up by the Board of Assessors, at their final meeting last evening. The amount of taxes to be raised for the present year, it is understood will exceed $800,000, which, with the expenses of collection, &c. will not vary much from one half per cent. on this valuation. The total increase of the valuation of real and personal estate, since the last year's report, is $23,018,461. The expenses incurred by the prevalence of the Cholera last year, which are to be included in this year's taxes, we understand, amounted to nearly $300,000.—[Jour. and Adv.]

VALUATIONS.

Wards.	Real Estate.	Personal.	Total.
1st	22,521,104	26,051,869	48,572,973
2d	10,514,500	2,864,735	13,379,235
3d	10,100,000	6,366,772	16,466,772
4th	6,851,556	2,565,553	9.417,108
5th	8,688,000	3,727,172	12,415,172
6th	5,675,550	2,885,776	8,561,326
7th	6,480,180	1,989,470	8,469,650
8th	6,899,686	1,406,400	8,395,086
9th	4,806,300	551,100	5,357,400
10th	6,230,800	636.500	4,867,300
11th	6,487,058	551,900	7,038,958
12th	7,432,325	489,900	7,921,225
13th	2,351,600	345,158	2,696,758
14th	4,453,600	1,988,605	6.442,205
15th	7,167,735	2,054,200	9,220,935
Total,	114.907,013	54,474,110	179,381,123

Coal Trade.—We take from the Miner's Journal of Saturday, the following statement of the coal shipped from the mines the present season, up to the 20 inst.:—

Little Schuylkill	25,718
West Branch Railroad	57,[illegible]50
Mount Carbon Railroad	55,326
Mill Creek Railroad	28,764
Schuylkill Valley Railroad	19,423
Lehigh Coal Trade	78,900
Delaware & Hudson Coal Trade	64,950
Total, tons	330,980

[*From the Boston Atlas.*]

Dr. Jonathan Wild, says a correspondent, whose death at Walpole has recently been announced, was venerable for years and for services to his country. In the spring of 1775 he received from Drs. Gardiner Baker and Warren his license to practise as a physician and surgeon. On the morning of the 19th of April he was walking alone in Randolph, his native town, and considering where he should pitch his fortune. The noise of guns at Lexington, decided him. He marched on that day as a volunteer, and arrived at Cambridge about an hour after the British had passed on their retreat. From that time he did not return home until he came sick from Canada whither he proceeded in the Spring of 1776, as a gunner in Major Stevens' artillery. His return took place in December following. Afterwards he served as surgeon's-mate, on board the Continental frigate Warren, Commodore John Hopkins; then as surgeon on board the privateer Speedwell, Captain Daniel, and, lastly, in the same capacity on board the Continental sloop of war Revenge, under the gallant and enterprising Captain Augustus Cunningham.

Dr Wild was a pensioner of the United States, during the last seventeen years of his life. His pension had lately increased, but he lived but a little while to enjoy it. He was eighty years old. For forty to fifty years he was an active practitioner of medicine.

Dr. Wild related to the writer sometime ago an anecdote of Washington of which he was a witness.

"On one night in December 1775, a party of 500 men was sent to fortify on Barrell's Hill, where the Insane Hospital now stands. It was very cold and Washington was there looking at the work. A man named Wilder of Plymouth, mistaking Washington for a soldier, came up behind him and putting his hands upon his shoulders shook him stoutly, saying, 'man alive, if you dont take a tool and go to work, you'll freeze to death.' The man was alarmed when he discovered his mistake, but Washington smiled so pleasantly that he was immediately relieved from his apprehensions.

The Rice Crops, which we noticed a few days since, as being very luxurient, have been somewhat injured within the last week, the high tides which prevail having broken through the embankments, and overflowed the fields in many places. The fields on Cooper River, which is said to have been the most promising, suffered most from these inundations.—[Charleston Courier.]

[*From the Alexandria Phenix of Tuesday.*]

Steamboat Burnt.—The Steamboat Ousatonic, plying between this place and the different landings on the Potomac River, was burnt to the water's edge, on Friday night last, whilst she was lying at Leonardtown, Md. The fire was entirely accidental, and so rapid was the progress of the flames, that the Captain and crew, asleep on board at the time, with difficulty escaped with their lives. We understand the Ousatonic was partially insured. Another boat, it is said, will be put upon this route as soon as the necessary arrangements can be made.

It is computed that there are in the United States about 800 whale ships, employing about 10,000 men, and which bring home every 40 months, about 227,960 barrels of oil, the value of which is not far from $4,000,000. The outfit of each ship, for 30 months' cruise, is from 15,000 to 20,000 dollars.

Health of New Orleans.—We are pleased to notice a manifest decrease of the number of interments for the last three days, and to understand that the number of cases of sickness has become less. We advise strangers, notwithstanding, not to hasten their return yet. As it is our intention weekly to notice the sanitory state of our city, they will readily perceive from our columns, when they can return with perfect security, and without risk.

Interments in the Catholic and Protestant Cemeteries.

	Catholics.	Protestants.
Sept. 13	23	12
" 14	21	7
" 15	14	15

[N. O. Bee of Sept. 16.]

There has been quite a decrease in the number of deaths within the last three days, but is owing more to the want of subjects, than any abatment in the disease. We have ascertained that there has been a few new cases of Cholera, but it does not appear to spread, and has been in almost every case produced by imprudence.—[N. O. Sept. 18.]

The death of the King of Spain is announced in a Lisbon letter of the 22d August, (some days later than before received,) published in the Boston papers of yesterday. The rumored battle between the forces of the contending brothers, was a rumor only.

Latest from Mexico.—Letters from Vera Cruz to Aug. 30th, state that the cholera was raging very badly among the poorer classes, and that the last accounts from the city of Mexico represented the disease as very destructive there also, among the same classes. Persons in comfortable circumstances were in both places comparatively exempt. Such has been the destruction among the soldiers, that both contending armies had been obliged to suspend all hostile movements. A letter from Mexico, dated August 27th, says that the deaths by cholera had already amounted to *fourteen thousand*, in a population of *one hundred and eighty thousand*. The disease was raging throughout the country.

From Brazil.—Capt. Green, of the brig Rebecca, from Para states that at the time of his sailing, that place was in a very unsettled state. A new President was hourly expected in a frigate from Rio, and it was expected that disturbances between the contending parties would take place at the exchange of Presidents. Preparations were making to fortify the city. The British sloop of war Race Horse, Capt. Cotton, sailed a few days previous on a short cruize; her commander had kindly offered to assist if necessary, all Americans residing at Para, in protecting them and their property. Produce of that country high and in demand. Dry salted Hides 150 reas per pound, Wet salted 100 do. Sugar 5 mill reas per arobe.—American produce in abundance and sales dull owing to the unsettled state of the country.

We are indebted to the Natonal Gazette for the following extracts from the introductory address delivered by Hon. Wm. Sullivan, before the Americen Institute of Instruction at Boston, 22d ult. Mr. Sullivan teaches practical truth in a clear and terse style, like a man of the world and a man of letters animated by a generous zeal for the welfare of all individuals. He answers in detail the important question—"*In what manner should an American youth be educated?*"

"The mere animal enjoyment of life, is far from being well understood in this country. This subject better deserves an appropriate treatise, than a short remark, which is all that this occasion allows. In this respect, we might be, with our abundant means far more intelligent and happy than we are. If those benevolent persons who give a portion of their time to teaching in Lyceums, would discourse on the common-sense practical philosophy of life, they would do far more good than they can do by discoursing ever so wisely on poetry, astronomy, rail roads and steam engines. How to eat, how to sleep, how to labour, what air to breathe, how to be dressed and how to be cleanly, concern every man, woman and child; for all these go to health, without which intellectual pleasures are of little worth.

"It is believed that thore are lasting and painful infirmities, which begin in the school room. It is a convenience, and a relief, to a busy mother to send her children to school, for several hours in the day. She considers them safe while so employed: nor only so, they are getting learning, and preparing to get a living. But at this tender age, while the bones are hardening, and the delicate structure of the human frame is easily deranged, it is more than probable, that long continued *sitting* lays the foundation for diseases which show themselves in after life, and occasion affliction to the child, and cost and pain to parents. The learning that may be acquired, in these early years, can be no compensation for such evils. It would be far better, for parent and child, to have good schools for *playing*, as well as learning, during the early years of infancy. The natural athletic action of the human system, has no tendency to deform, or enfeeble it; while the tedious confinement of the school room is certain to do both. All that is contended for, is, that th ere should be a rational mixture of bodily action, and mental employment for children, as mutually auxiliary in preserving health, and in acquiring learning; and however common such thoughts may be, they cannot be too often expressed until they are carried into practical and general effect."

* * * * * *

"Admit that all our schools, as they now exist, and all others which have been mentioned, if established, answered the purposes intended, they would only qualify young persons to commence the getting of a living, and to acquire property, as though the sole purpose of this life were to get, and to use, to keep, and die possessed of, such things as can be weighed, measured aud counted, or valued by money. It is not perceived, that it makes any part of the course of education, to teach *how to live, or for what to live*. Is it wise or consistent with human capacity, to limit education to the mere purpose of getting this world's goods and to exclude all instruction as to the uses to which they should be applied and as to their true value in comparison with other attainments? It is not assumed that property is, in general, misused among us, nor intended that the honorable industry which is enriching this country should be laid aside or interrupted. No doubt this industry is conclusive proof of national welfare, as far as it goes. It is the source of the noble charities of which our citizens may be justly proud, since nearly all of these come from private donations, and not from the public chest. Passing by many cases, which might be mentioned, we may select, with pride and pleasure, the recent munificence of one of our citizens, in aiding to bestow a new sense on those whom nature seems to have neglected, and to restore a sense to those whom misfortune has bereaved. Such sensibility to the wants of others, sheds a glorious lustre on our land. It is not contended, that the manner in which property is acquired, or used, is wrong, but that the education which qualifies one for no more than to acquire property, merely for its own sake, is not that education which qualifies any human being to be intelligent and happy." * * *

"It may be expected that when one ventures to assume that society is in error, and can become wiser, that he should point out the cause of error, and suggest the remedy. I have but light pretensions to the ability to do this. So far as I can see into this matter, it is from the general prevalence of unsound opinions as to worldly good; and from the habit into which the members of society have fallen, of making *comparisons* between their own condition, and that of others. One, for example, has little satisfaction in a keen appetite, simple food, good clean raiment, a moderate and comfortable dwelling place, furnished for usefulness and not for show, and in safe and convenient means of transportation from place to place, nor even in good health, when he is obliged to compare himself with one who dwells in a splendid mansion, adorned with pictures and statues, and who dines at a table dazzling with porcelain, silver, and gold and on food which it has tortured ingenuity to prepare for him; and who rides on yielding springs seated on downy cushions. But the person who distresses himself in comparing his condition with that of his fortunate and luxurious neighbor, would be astonished to hear, that his neighhor is envying him for his supposed freedom from vexatious care, for his tranquil industry, and well earned health. It does not seem to be the possession of riches, nor every use, nor even the most common use of them, which constitute happiness."

"For, after the common wants of nature are satisfied, if the rich have no inclination to use money for charitable purposes or the public benefit, the pleasure of being rich must be derived from the consciousness of being thought, by the world, to be so.—The real value of wealth may be tested by comparing it with knowledge. Lord Bacon, or some other wise man, says that knowledge is power. Wealth cannot buy health but can easily lead, to disease. It cannot buy knowledge, good sense, taste, good manners, or good feelings; but may, and often does, prevent the acquisition of all of them. It cannot purchase self-satisfaction or tranquility, but often makes one dissatisfied and painfully anxious. It does not make one independent, but often makes one a miserable slave. If a miracle could be wrought in relation to a sensible, well informed man, and a rich one who values himself only on his riches, the true value of wealth would be discerned. Suppose two such men could remain precisely in their respective conditions, as to possessions and use of worldly things, but that the eyes and tongues of the world should become insensible as to both of them. The rich man's house would be seen, but he would not be known to be the possessor. His festivals would occur, but he would not be known to give them. His equipage would continue to glitter, but he would not be known to be the fortunate owner. He would come to the sad conclusion, that he spends his life for others, and does not live for himself. While the other man would still have his sources of satisfaction, and come to the sound conclusion, that the world's admiration is of no worth to him."

"But this is not the worst of selfish wealth. One's children are necessarily habituated to consider, that the business of this life, and all that life is given for, is to be rich. They receive no instruction which qualifies them to know how riches should be used. If they inherit, and become afterwards poor, they are in a miserable state, compared with a poor man's child, who thinks it no degradation, but a privilege, to labor in any honest vocation. There are some who think the statute of distributions is an unwise provision; it tends, they say, *to break families down in three or four generations*. So far from being wrong, this is the very best feature in our whole system of policy. If wealth could be entailed, in such a country as this, while education continues as it is, all the inducements to be intelligent and happy would disappear from the land. The less that is thought of wealth for its own sake, and the more that is thought of those qualities which no wealth can purchase, the better pretensions will Americans have to intelligence and happiness."

Tactual Sensibility of the Heart.—A noble youth of the family of Montgomery, from a fall and subsequent abscess on the side of the chest, had the interior marvellously exposed, so that after his cure, on his return from his travels, the heart and lungs were still visible and could be handled; which when it was communicated to Charles I., he expressed a desire that Harvey should be permitted to see the youth and examine his heart. "When," says Harvey, "I had paid my respects to this young nobleman, and conveyed to him the king's request, he made no concealement, but exposed the left side of his breast, when I saw a cavity into which I could introduce my fingers and thumb; astonished with the novelty, again and again I explored the wound, and first marvelling at the extraordinary nature of the cure, I set about the examination of the heart. Taking it in one hand, and placing the finger of the other on the pulse of the wrist, I satisfied myself that it was indeed the heart which I grasped. I then brought him before the king, that he might behold and touch so extraordinary a thing, and that he might perceive, as I did, that unless when he touched the outer skin, or when he saw our fingers in the cavity, this young nobleman knew not that we touched the heart.—*Bell's Bridgewater Treatise.*

Extraordinary Product.—An experiment has lately been made on salt water obtained at the Messrs. Presten's Salt Works, on Holston River, which exhibited the following result. Twenty buckets full (sixty-seven gallons) of the water was put into a boiler, which evaporated in four hours, leaving a deposit of five bushels salt, weighing one hundred and fifty one pounds. This experiment shows that the bulk of salt is in the proportion of one-fourth to the water in which it is held. It is thought that there is known no water which approaches this in strength. There is not the slightest quantity of bittern or other foreign matter found in it. The supply of this water, is equal to the manufacture of five hundred bushels of salt in twenty-fours hours.

Account of Common Salt.—It does now appear that the mineral kingdom contains a single species capable of being employed as food: but there is one mineral species which indirectly contributes to the nourishment of many other animals as well as man, and that is common salt, the flavor of which, to a certain extent, is not only grateful to the palate, but, practically speaking, mankind could not exist, or at least never have existed without the constant use of it. Thus, though employed in very small quantities at a time by any individual, and almost exclusively for the purpose either of preserving or of rendering his food more palatable, this substance may fairly be classed among the principal necessaries of life; and correspondently with this statement, we find that nature has supplied it in abundance, indeed in profusion often, in various parts of the globe: for, to say nothing of those apparently inexhaustible masses which occur among the solid strata of the earth, and which have been constantly quarried through successive ages from the earliest records of history, the ocean itself is a never-failing source of this valuable substance. In other instances salt springs afford the means of a ready supply; and throughout a considerable part of the sandy districts of Africa and Asia the soil itself abounds with it. The abundant supply of common salt coincides with its extensive utility. It is every where indispensable to the comforts of man; and it is every where found, or easily obtained by him. And, though not to the same extent, the same observation holds with reference to many other natural saline compounds. Thus carbonate of potash, and natron or carbonate of soda, alum, borax, sal ammoniac, and sulphate of iron, or green vitriol, which are most extensively useful salts in many processes of the arts, are either found abundantly in various parts of the world, or may be obtained by very easy means: while a thousand other saline compounds, which are rarely of any practical importance, are scarcely known to exist in a native state.—[Kidd's Bridgewater Treatise.]

Turkish Proverbs.

Don't trust to the whiteness of the turban, the soap was bought on trust.

Death is a black camel which kneels at every door.

Blood is not washed out with blood, but with water.

THE SHEPHERD'S RESOLUTION.

[This fine old song was written by George Wither, a satirical writer of the times of James and Charles the First. It is extracted from one of his long pastoral poems, entitled "The Mistresse of Philarete," published in 1622.]

Shall I, wasting in despair,
Die, because a woman's fair?
Or make pale my cheeks with care,
'Cause another's rosy are?
Be she fairer than the day,
Or the flowery meads in May
  If she be not so to me,
  What care I how fair she be

Shall my foolish heart be pined
'Cause I see a woman kind?
Or a well disposed nature
Joined with a lovely feature?
Be she meeker, kinder, than
The turtle-dove or pelican,
  If she be not so to me,
  What care I how kind she be?

Shall a woman's virtues move
Me to perish for her love?
Or *her* well-deservings known,
Make me quite forget *mine own?*
Be she with that goodness blest
Which may merit name of *best*,
  If she be not such to me.
  What care I how good she be?

'Cause her fortune seems too high,
Shall I play the fool, and die?
Those that bear a noble mind,
Where they want of riches find,
Think, what with them, they would do,
That without them, dare to woo:

And unless that mind I see,
What care I how great she be?
Great or good, or kind or fair,
I will ne'er the more despair.—
If she love me, this believe;
I will die ere she shall grieve.
If she slight me when I woo,
I can scorn and let her go.
If she be not fit for me,
What care I for whom she be?

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR,
35 Wall street.

New-York, August 14, 1833.

AMERICAN INSTITUTE.

☞ THE Sixth Annual Fair of the American Institute will be held in the city of New-York, at Masonic Hall, on Tuesday the 15th of October next, and continue three days.

Premiums, consisting of Diplomas, or Medals, will be awarded, as usual, for such articles of American production, as shall be adjudged superior either in material or workmanship.

As a new impetus seems to have been lately given to American Industry, it is confidently expected that the Fair announced for October next, will present still more decisive evidence of the advancing condition of our agriculture, our manufactures, and the arts, than any of those which have preceded it.

Such ingenious and useful machinery as may be conveniently transported, and put in operation, will give interest and spirit to the occasion.

Each article should be labelled with the name of the manufacturer, or producer, and with the agent's name, and number, in this city.

The design is to inform buyers where they can supply themselves with the best articles. In this way, by means of former Fairs, many excellent workmen have become better known and have obtained permanent and profitable customers, who, while they have been better served, have at the same time rewarded and stimulated American skill and industry.

Articles entered for premiums must be delivered as early as Monday, the 14th of October.

More particular notices will be published previous to the Fair. For any other information which may be desired, apply to either of the Managers, in person or by letter.

JAMES LYNCH,
ANDREW WILLIAMS,
EDWARD T. BACKHOUSE,
CLARKSON CROLIUS, Jr.
WM. F. PHYFE,
JOHN SAMPSON,
JOSEPH TITCOMB,
JARED L. MOORE,
GEORGE BACON,
} Managers.

New-York, July 4th, 1833. A29 t13 art R J

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope,* having removed their establishment to Hudson under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

RAILWAY IRON.

☞ Ninety-five tons of	1 inch by	½ inch,		*Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
200	do.	1¼ do.	½ do.	
40	do.	1½ do.	½ do.	
800	do.	2 do.	½ do.	
800	do.	2¼ do.	½ do.	
soon expected.				

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON,
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. a73meowr

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.
J25 tf

NOVELTY WORKS,

Near Dry Dock, New-York.

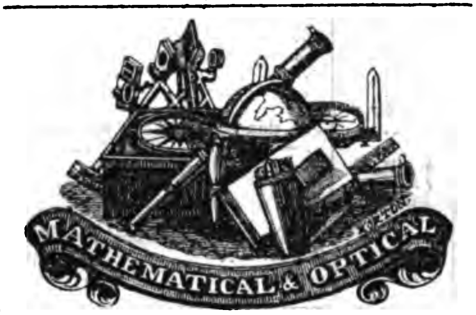
☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J9 ROGERS, KETCHUM & GROSVENOR.



INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m25

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO, 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

⁂ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
S1 R J M M & F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. S1 R J M M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 17th to the 23d day of September, 1833, *inclusive.*

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Sept'r 17..	6 a. m.	56	30.25	NNE—w by s	faint	w by s / sw	fair
	10	63	30.28	sw—s	light	..	..
	2 p. m.	70	30.22	s	mod.-fresh	.. / ssw	.. —cloudy
	6	65	30.21	..	fresh	..	cloudy
	10	62	30.20	..	..		..
" 18..	6 a. m.	62	30.10	..	..	sw	.. —rainy
	10	64	30.07	ssw	..	..	rain
	2 p. m.	66	30.00	sw	moderate	..	..
	6	67	30.00	..	..	..	cloudy
	10	67	30.00		calm		..
" 19..	6 a. m.	67	30.00	sw	light	wsw	.. and foggy —fair
	10	70	30.02	..	..	..	fair
	2 p. m.	80	30.00	..	..	..	..
	6	76	29.97	wsw	..	..	..
	10	74	29.98			..	..
" 20..	6 a. m.	76	29.97	..	moderate	..	..
	10	80	29.94	sw	..	..	..
	2 p. m.	84	29.91	..	..	..	..
	6	81	29.90	..	..	..	.. —clouds and lightning at w & n
	10	76	29.89			..	cloudy --thunder shower
" 21..	6 a. m.	69	29.92	NNW—N	..	sw / n	..
	10	66	30.00	N	..	sw	..
	2 p. m.	66	30.00	N by w	..	..	..
	6	65	30.03	..	..	..	..
	10	61	30.10	..	..	..	..
" 22..	6 a. m.	54	30.20	NNE	..	sw by s	fair
	10	60	30.25	..—N by E	..	..	.. —thin variegated *cirri* from ssw
	2 p. m.	64	30.23	N by E	..	..	.. — .. .. ..
	6	62	30.21	..	light	sw / N by E	.. — .. .. ..
	10	58	30.21	..	..	sw by s	..
" 23..	6 a. m.	53	30.20	NE	moderate	..	..
	10	62	30.22	ENE	fresh	..	.. —detached *cirri* beautifully variegated
	2 p. m.	64	30.16	..	moderate	ssw	.. — .. .. ..
	6	63	30.15	..	..	..	.. — .. .. ..
	10	60	30.10		light		..

Average temperature of the week ending Monday, September 23, 66°.94.

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of August, 1833—(*Latitude* 31.10 *N.*, *Longitude* 91.59 *W. nearly.*)

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Thermometer*			*Wind.*	*Weather, Remarks, &c.*
1833.	Morn'g.	Noon.	Night.		
August 1	75	86	78	calm	clear all day—Red River falling
" 2	74	88	76	..	.. ..
" 3	75	88	84	..	.. ..
" 4	78	88	82	sw—light	cloudy
" 5	78	92	86	..	clear—evening calm and cloudy
" 6	78	80	76	calm	.. morning—11 a.m. fine shower fr NW—heavy thunder and rain in even'g
" 7	74	89	84	..	.. .. —evenings cloudy—sowed turnips, cale, cresses, lettuice, and radish seed
" 8	78	90	86	..	clear—martin birds left here
" 9	78	89	84	NE	.. —flying clouds—evening and night, showers
" 10	77	88	80	W	cloudy all day—sweet potatoes very large for use
" 11	79	85	80	SW	.. —thunder showers evening
" 12	78	88	83	..—light	clear—evening calm
" 13	73	88	85	calm	.. —Red River fell this month 7 feet 10 inches, and off the flat
" 14	74	90	86	..	..
" 15	74	90	87	NW	.. —evening calm and cloudy
" 16	74	87	82	N—high	.. —flying clouds
" 17	68	84	80	NW—light	..
" 18	67	87	78	..	..
" 19	67	86	82	W—light	..
" 20	69	88	84	calm	..
" 21	72	89	82	NE—light	.. —light flying clouds
" 22	69	89	83	..	.. —evening calm
" 23	72	91	82	N	.. — .. cloudy, and thunder, no rain
" 24	74	91	81	calm	cloudy
" 25	74	90	82	NE—light	clear
" 26	73	89	82	calm	..
" 27	71	88	84	..	..
" 28	70	89	83	NE—light	.. —light flying clouds
" 29	70	89	83	..	.. — .. .. ..
" 30	71	89	78	..	.. —evening calm and cloudy
" 31	71	88	79	..	cloudy
Average	73	88	82		General average of temperature for the month of August, 81°.

Red River fell from the 1st to the 13th August, 7 feet 10 inches, and from the 14th to the 31st, 9 feet 4 inches—making in all the month, 17 feet 2 inches; and is now below high water mark 22 feet 10 inches.

MARRIAGES.

On Saturday evening, 28th inst. in St. Thomas's Church, by the Rev. F L. Hawks, AUGUSTUS T. COWMAN, to ANN B. daughter of James GILLENDER, all of this city.

By the Rev. Dr. Brownlee, AMOS WILLCOX, Esq. to Mrs. ELIZA LIMARES, daughter of John Nalle, of New York.

On Thursday evening last, JOSEPH D. SLADE, Esq. of Portsmouth, N.H., to Miss CATHARINE A, eldest daughter of Wm. Schuerman, of this city.

On Thursday evening, Sept. 26th, DANIEL H. TOMPKINS, to ELIZA, daughter of William Wright.

On Thursday evening, 26th Sept., by the Right Rev. Bishop Onderdonk, JOHN W. SCHMIDT, jr. M D., to Miss MARY ELIZABETH, only daughter of E Baker, Esq., all of this city.

At Albany, on Tuesday evening, by the Rev. Dr. Ludlow, William Cooper, to Susan C., daughter of the hon. James Vandespoel.

On Wednesday evening last, at Newtown. L. I. by the Rev Mr. Shelton, Mr CHARLES H. JUDSON, merchant of this city, to MARY, daughter of the late Capt. Daniel B. Moore, of the former place.

At Richmond, C. W. M'MURDO, of New Orleans, to Miss ANN F. DIXON; and CARTER CRUTTENDEN, to Miss JULLET ADELLA HATCHER.

At Onondaga Hill, on the 19th, by Rev. J. H. Prentice, Mr. GEORGE REED, of Watertown, Jefferson co. to Miss ESTHER O. JUDD, of the former place.

The same day, by the same, F. C. D. M'KAY, Esq. of Warsaw Genesee co. to Miss ANGELINE J. JUDD, of Onondaga.

In Middlebury, (Vt.) on the 16th ult. by Rev. Mr. Merrill, Rev. HENRY SMITH, Prof. of Languages at Marietta College, Ohio, to Miss HANNAH BATES, daughter of Rev. Joshua Bates.

Yesterday morning, at Elizabethtown, New-Jersey, by the Rev. Thomas Morell, Mr. FRANCIS BURRITT, of New-York, to Miss PHOEBE PERRINE, of the former place.

In Philadelphia, on the 25th inst. by John Swift, Esq. Mayor, GEORGE D. COGGESHALL, Druggist of this city, to Miss DEBORAH, daughter of Thomas Walter, of Lower Merion, Township, Montgomery Co., (Penn.)

DEATHS.

On Sunday morning, at 5 o'clock, of a lingering disease, Mrs. ANN HAUSBROW, in the 24th year of her age.

On Friday, 27th ult. at Mamaroneck, Westchester county, EDWARD M. JOHNSON, in the 45th year of his age.

In Russelville, Ky., Maj. Morgan A. Heard, known to the public as the individual who attempted the life of Mr. Arnold, of Tennessee, on the steps of the Capitol, during the session of Congress before last.

In Utica, on the 19th inst. after a long and painful sickness, Mrs. Sophia Bagg, wife of Moses Bagg, Esq.. in the 53d year of her age.

At Pensacola, on the 2d inst., Capt. David Christie, aged 35, formerly of New York.

At New Windsor, Orange county, N. Y., WILLIAM, infant son of John Ellison, Esq.

At Norfolk, LITTLETON S. SAVAGE.—At Pensacola, Captain R. B. THROCKMORTON, of Norfolk.

At Chicago, on the 24th ult. EDWARD SUMMERFIELD, Esq. from Georgia, lately from Missouri.

At Atlas, Illinois, Mrs. LUCINDA RITCHEY, aged 48 years, late of St. Louis.

In Green County, on the 1st ult. Mr. HUGH M'GILL, aged 34 years.

In St. Louis, of the cholera, on Monday, after a sickness of eight hours, AMELIA ANN, one of the Sisters of Charity.

On the 11th ult. at New Orleans, of yellow fever, Mr. JAMES FINDLAY, of Forres, Murrayshire, Scotland.

At New Orleans, of the yellow fever, Oscar Wendell, eldest son of John L. Wendell, Esq., of Albany

"Mr. Wendell," says the New Orleans Mercantile Advertiser, "had resided in this city for the last two years, and by possessing a frank, independent, and generous disposition, he had endeared himself to a large circle of friends, who, while they deeply and sincerely sympathize with his bereaved and afflicted relations in his loss, bow with submission to the decrees of that all wise and Supreme Being, who gave and who hath taken away."

Sales of 151 Lots of Ground at Mount Prospect, L. I., 2½ miles from Brooklyn Ferry, by James Bleecker & Sons, October 1, 1833.

5 lots	$160 00	each,	$360 00	3 lots	$105 00	each,	$315 00
4 do.	85 00	do.	340 00	9 do.	130 00	do.	1170 00
3 do.	72 50	do.	217 50	8 do.	75 00	do.	600 00
4 do.	130 00	do.	520 00	2 do.	125 00	do.	250 00
4 do.	110 00	do.	440 00	4 do.	82 50	do.	330 00
7 do.	62 50	do.	437 50	4 do.	80 00	do.	320 00
2 do.	60 00	do.	120 00	2 do.	85 00	do.	170 00
5 do.	55 00	do.	275 00	4 do.	100 00	do.	400 00
2 do.	117 50	do.	235 00	4 do.	and a cottage,		950 00
1 do.			92 00	4 do.	127 50	do.	510 00
2 do.	60 00	do.	120 00	5 do.	250 00	do.	1250 00
2 do.	50 00	do.	100 00	4 do.	152 00	do.	610 00
6 do.	40 00	do.	240 00	4 do.	160 00	do.	640 00
3 do.	87 50	do.	262 50	4 do.	125 00	do.	540 00
5 do.	65 00	do.	325 00	2 do.	227 50	do.	455 00
1 do.			47 50	4 do.	220 00	do.	880 00
7 do.	90 00	do.	630 00	6 do.	& frame build'g		2475 00
4 do.	95 00	do.	380 00	3 do.	190 00	each,	570 00
2 do.	120 00	do.	240 00	4 do.	gore		500 00
1 do.			140 00				
1 do.			155 00	151			$19,252 60

NOTE.—The above Lots were on an average 25 by 100, and faced on streets to be laid out through the tract and on the turnpike road leading to Flatbush.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

o1

WINCHESTER AND POTOMAC RAILROAD.

☞ TO CONTRACTORS FOR EXCAVATION AND MASONRY.—Proposals will be received by the undersigned at Taylor's Hotel, in Winchester, Va. *on the 7th day of November next*, for the Grading and Masonry of *Twenty seven miles* of the Winchester and Potomac Railroad, commencing near the town of Winchester, and ending at the Shenandoah River. The above work will be divided into sections of convenient length; and plots and profiles of the line, and drawings of the requisite constructions, will be exhibited at Winchester, for one week previous to the letting.

Proposals will be received at the same time and place, for delivering, on the line of the Railroad, *Four hundred thousand lineal feet* of Heart Yellow Pine or White Oak Rails, the dimensions of the rails to be five inches wide, by nine inches deep, and in lengths of fifteen and twenty feet.

Any further information in relation to the above work will be given on application, verbally or by letter, to William H. Morell, Principal Assistant Engineer, Winchester, Va. or to the Assistant Engineers on the line.

MONCURE ROBINSON, C. E.

Sept. 27th, 1833. o5 tn7.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

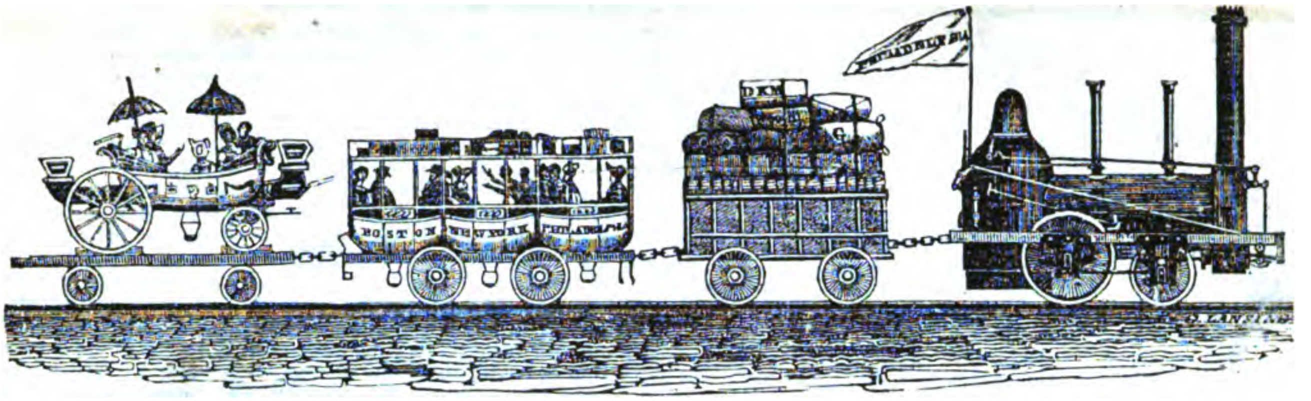
☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, OCTOBER 12, 1833. [VOLUME II.—No. 41.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, OCTOBER 12, 1833.

Mad River and Lake Erie Railroad.—Our readers will perceive by an advertisement in to-day's paper, that books for subscription to the stock of the Mad River and Lake Erie Railroad are to be opened on Monday, the 14th instant, at the Exchange. We have had occasion, heretofore, to notice this project, and have published the Report of the Engineer upon the result of an experimental survey to ascertain its practicability and probable cost. From this report it appears that the length of the road is 153 miles, and that the country over which it is to pass is in the highest degree favorable. The cost of construction will not exceed $11,000 per mile for a double track. It is remarkably adapted to the employment of locomotive engines, exclusively, upon it, as there is not an elevation upon the whole route that cannot be overcome by them with ease, without requiring either stationary or animal power. The fertility and resources of this part of the State of Ohio cannot be exceeded by any portion of the western country.

It requires no great stretch of the imagination to look forward to the period, and that not far distant, when, by the construction of this great and important work, the valley, not only of the Great Miami, celebrated as the garden of Ohio, but the great Valley of the Mississippi itself, will pour its riches into our bosom.

But there is another consideration which strikes us with peculiar force: and that is the great importance of securing to New-York the vast amount of travel from the South-Western States, that now goes to Baltimore and Philadelphia. The city of Cincinnati is the stopping place for all travellers from the south by the Mississippi and Ohio rivers. This is rendered necessary by the difference in the depth of water above and below that city. Most of the boats that come up to Cincinnati from below, drawing so much water as to prevent them from ascending the Ohio farther. Boats of lighter draught are, therefore, employed in the trade between that city and Wheeling. This renders a trans-shipment necessary. As matters at present stand, the traveller finds it easier for him to take steamboat from Cincinnati to Wheeling or Pittsburg, and then to cross the mountains by stage, upon a comparatively good road, than to traverse the whole length of the State of Ohio, over bad roads, to reach Lake Erie, where he has about as far to travel to reach New-York as he would have, were he at Wheeling. The consultation of personal accommodation, of course, carries off the great portion of the travel to Baltimore and Philadelphia—that is, the merchant who comes to New-York for his goods finds it more convenient to take Baltimore and Philadelphia in his route, than to come here direct. When at those places, he will, of course, look at the markets, and as he has to return by the way he came, he will purchase part of his goods there.

But, construct this road, and how will the matter stand? The traveller finds himself at Cincinnati. He then has the choice of a safe, easy, and expeditious conveyance to the Lake, requiring only 18 to 20 hours travel, whence he can reach New-York in 84 hours, or he can take the steamboat to Wheeling, requiring generally from three to four days, when he will have to consume three days more to reach Baltimore, unless he chooses to ride night and day for two days, making at least six days from Cincinnati to *Baltimore*, by the one route, and five days to *New-York*, by the other.

We think there can be no doubt as to which route would command the preference.

This will more emphatically be the case with the traveller from St. Louis, and intermediate points, along the route of the National Road. Already worn out by a long journey in the stage, when he arrives at Springfield, where the two roads intersect, he will prefer the route by way of the Lake, to a two days' ride to Wheeling, and a threedays' ride thence to Baltimore.

We have entered thus into detail, because we consider it of the highest importance that the *travel*, not only of Ohio, (for that is but a small portion of the Great West,) but of Indiana, Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, Louisiana, and even of the Texas, should, by the offer of a cheaper, more comfortable, and much more expeditious route, be secured to this city. The merchant *will* consult his own personal accommodation in a journey of so great a length, and if a better route, in these particulars, is presented to him elsewhere, it is vain to think he will not embrace it.

The remarks we have made with regard to the travel, will apply with equal force to the trade of the West, for the same facilities are offered for the transportation of merchandize as for that of passengers.

We have heard the remark made, that this work is too far off materially to affect the interests of New-York. We are entirely of a different opinion, and so must be, we think, every man who gives the subject a moment's reflection. Whatever avenues you open for the transportation of produce to Lake Erie, affect New-York as much as the beating of the heart affects the remotest extremities of the body. This produce will come to Buffalo, whence it will find its way to the Hudson. It was avowedly to prevent the trade of the Mississippi Valley from being diverted from passing through the Ohio Canal, and going to Wheeling and Pittsburg, whence it would go to Baltimore and Philadelphia, that an arrangement was made by commissioners with Ohio, last winter, reducing the rates of toll on both canals, on down freight, 29 per cent., and on freight going west, 14½ per cent., and we understand that a further reduction of 25 per cent. is to be made this winter on up freight for the same purpose. Notwithstanding this reduction, the tolls this year have exceeded those of last year, for the same period, upwards of $212,000. The interests of the two States are indissolubly united. Ohio is interested in causing all the trade of the lower country to pass through her territory, and New-York is equally interested in effecting this object, because all the produce that passes through that State, passes through her territory also.

Much more might be said upon this subject, but from the view that we have taken of it, we think that the Commissioners on the part of this Company come before the commercial interest of New-York with fair, yea, with irresistible claims to their support, and we trust they will find in the liberal and prompt manner in which the stock will be taken, that the citizens of New-York properly appreciate its importance.

Baltimore and Philadelphia, our enterprizing and spirited rivals in the great struggle for the trade of the west, are, and we are gratified to see it, fully awake to the subject; let not New-York, then, through *indifference*, or *ill-timed parsimony*, lose the vantage ground to be gained by the construction of this, to us, invaluable work.

For a map of the state of Ohio, and parts of the adjoining states, and Lake Erie, see page 645 of this number of the Journal.

[For the American Railroad Journal.]

Mr. Editor,—I understand that a committee appointed by the Directors of the Boston and Providence Railroad Company, to decide upon the southern termination of the Railroad, is now sitting in this city for that purpose.

As I am a stockholder, and deeply interested, I may be allowed through your Journal to express the wish that it be located so as to accommodate the public generally, the city of Providence and the New-York travel and transportation, by the way of Stonington. Should these considerations not have full weight in this decision, it may prove highly prejudicial even to the Boston and Providence Railroad, which I consider one of the first routes and best Railroads in the United States.

It is suggested that this road may terminate in Massachusetts, opposite Providence, and may be connected with the Stonington Road, by a ferry below the city of Providence. By this mode the trade of Providence would not only be greatly inconvenienced, but the travel and transportation to New-York via Stonington would be in a great degree impaired; not only would the distance be increased considerably, but the ferry would be an insurmountable obstacle at some seasons of the year, and an objection at all seasons.

If the Rhode Island Company's are not permitted to enter the Boston and Providence Road on equitable and reciprocal terms, will not some other mode be discovered to continue the Stonington Road to Boston, to accommodate the city of Providence and the New-York travel? Some persons may not think so, but I have no doubt there will, from what information I can collect; and I would ask the Directors of the Boston and Providence Company to pause before it is too late, and prevent the consequent evils that must ensue to the stockholders, if there is not a mutual and good understanding; there is a harmony of interest between the several companies which demands of each that it promote the interest of the other. I verily believe that the stock of the Boston and Providence Railroad Company is 5 per cent. lower at this time than it would be were this question of the union of the roads satisfactorily disposed of.

[For the American Railroad Journal.]

Mr. Editor—

I observe by the Journal of Commerce that a keel has been laid in Boston for a Steamboat intended as a Liverpool Packet, and it may be of great importance to the proprietors and the public to know that a boiler has been invented, on an improved plan, to burn anthracite and other coals, which it is anticipated will obviate the principal difficulties of crossing the Atlantic by steam.

The principle has already been tested by a boiler built for the purpose, and another is nearly completed, by Mr. Allaire, for the Delaware and Hudson Canal Company, to be put in a boat to run on the North River.

Miami Canal.—It was expected that this canal would have been completed to the river, during 1833. The season has been such as to render this impracticable. From Court street, to the River, ten locks are to be constructed. All of them are partly prepared, one only completed. They are built of the most substantial materials, and in the most durable manner. Mr. Laughry, the undertaker, is a practical mason, and has evinced a good stock of mechanical pride, as well as skill, in their construction. It is a pleasant walk, of a dry day, to traverse the line of the canal from where it crosses Main street to the river, and observe the work in its present progress. It cannot fail to excite reflections highly pleasurable to any mind disposed to rejoice at the successful efforts of our almost infant state, and to anticipate with satisfaction the point of greatness to which she may arrive, if she continues as she has commenced in the construction of public works.—[Cincinnati Gazette.]

Navigation of the St. Lawrence.—It may indeed be said of American Enterprize, that it never slumbers nor sleeps. A project of vast importance to our Northern Frontier, begins to be agitated at Ogdensburg, to which, as a matter of course, the attention of the people of this state will be directed. It is no other, than that of making the St. Lawrence river navigable, between the Lake St. Francis and Ogdensburg, at a comparatively trifling expense, and bringing its whole trade within the State of New York, where a transit duty may be levied upon it, that of itself will defray a great part of the expenses of the State Government.

It appears that the Grass river, which is navigable for steamboats to within three miles of Massena Village, is separated at this point from the St. Lawrence, by a deep ravine, and very low land, which at a trifling expense, might be made a navigable channel!

This channel would communicate with the St. Lawrence, half a mile above the Long Sault rapids!

The Canadians have proposed to cut a Canal round these rapids on their side of the river, but this project of our countrymen would effectually divert the carrying trade through our own territory.

The contemplated canal will be but five miles long, and require but two locks!

The nature of the ground is such that the excavation, will be practicable at a small expense. We hope the people of Ogdensburg will have surveys made immediately, in order that the action of the Legislature may be had upon the subject as early as possible.

We should be glad to learn from our friends in that quarter, a more particular account of the capabilities of the Grass river, and also of the natural canal connecting it and the Oswegatchie.

[From the New-York American.]

Mad River and Lake Erie Railroad.—The facts and reasonings of the annexed exposé by the Commissioners who are here to superintend the opening of books for subscription to the stock of the *Mad River and Lake Erie Railroad*, cannot, we think, but have the effect of recommending the enterprize to the capitalists of this city:

In presenting this road to the citizens of New York for patronage and support, it will be expected that the Commissioners offer to those who are asked to invest their funds in its stock, some evidence of its probable productiveness; together with its utility and importance to the public, as a thoroughfare of travel and commerce.

The connection of the southern bay of Lake Erie at Sandusky, with the northern bend of the Ohio river at Cincinnati, by railroad and canal, has long been looked to with interest and solicitude by the people of the West; and has struck with great force, all intelligent travellers that have passed from one to the other of these points, as a work in every way worthy of the patronage and support of the citizens of New York and Ohio, whose interests it so indissolubly unites. The fertility of the country through which this connection must be made, its uniform soil and even surface, with its admirable adaptation to the construction of a railroad, point to it, as one that in a few years must be as productive as any work of the same character in this or any other country.

Compare this with any other route in the United States, and then ask yourself, where it is that you intercept as large a portion of the travel from the West to the eastern cities, as you do by this contemplated railroad.

Is it not by this route that you tap the great artery of the western travel and western commerce, at its most eligible point, and by that means at once throw your merchandize into the centre of our population, and agricultural wealth at the city of Cincinnati; which is now and must ever continue to be the most important point in the valley of the Mississippi.

Cincinnati at this time concentrates nearly all the travel from the *nine* western and south western States, towards the Atlantic cities, and hence the great importance of uniting New York by easy and expeditious conveyance with that place. Construct this road to lake Erie, and your Utica and other roads, on to Buffalo, and you have accomplished your object by opening an easy line of conveyance, that can never be supplanted, either by a route from Baltimore or Philadelphia, across the Alleghany mountains, nor by any other, connecting lake Erie with the great valley of the Mississippi. And the traveller from the far west, instead of having to pass through Baltimore and Philadelphia to reach New York, as is now the case, will then find it much more easy, and convenient, and cheaper, to pass through New York, in order to reach Baltimore and Philadelphia.

The time required to travel from the principal points in the western and south western States, by the route of the proposed road, (in connection with a Railroad from Buffalo and Albany,) to New York, (and we intend to make ample allowance) will be as follows:

From New Orleans to New York, 13 days; from Natchez to New York 11 days; from St. Louis, via the Great National (McAdamized) Road, which intersects the proposed rail-road at Springfield, 7 days; from Vandalia, the capital of Illinois, by do. 6 days; and from Indianapolis, the capital of Indiana, also by the National Road, 5 days; from Nashville, the capital of Tennessee, 7 days; from Louisville, Kentucky, via Cincinnati, 5 days; from Cincinnati, 4 days; and from Sandusky, 3 days—and here we will remark, that the proposed railroad will present *the most direct route, that can possibly be obtained, from Buffalo to each of the above named places.*

We are unable to form a correct estimate of the amount of merchandize and agricultural productions that will pass and repass over this road, but we appeal with confidence to all who have travelled over the section of country through which the route passes, (and we have been pleased to meet with many of your citizens that have,) if in this, or any other country, they have seen a better soil, with more industrious occupants, or a larger surplus of agricultural productions than is to be found along this very line of inland communication. We have travelled much in both the western and eastern parts of the United States, and without favor to this section of country, or prejudice against any other, we confess that we have yet to see the country capable of yielding the same amount of agricultural productions.

We are not however left entirely to conjecture on this point, but have at our command an official document from which we will make a few extracts.

This road connects with the northern termination of the Miami canal, at Dayton. This canal is a mere indentation from Cincinnati into the country up the Miami valley of only sixty five miles; connecting no important point, but merely operating as a drain to take off a portion of the surplus production along its route, and near its termination.

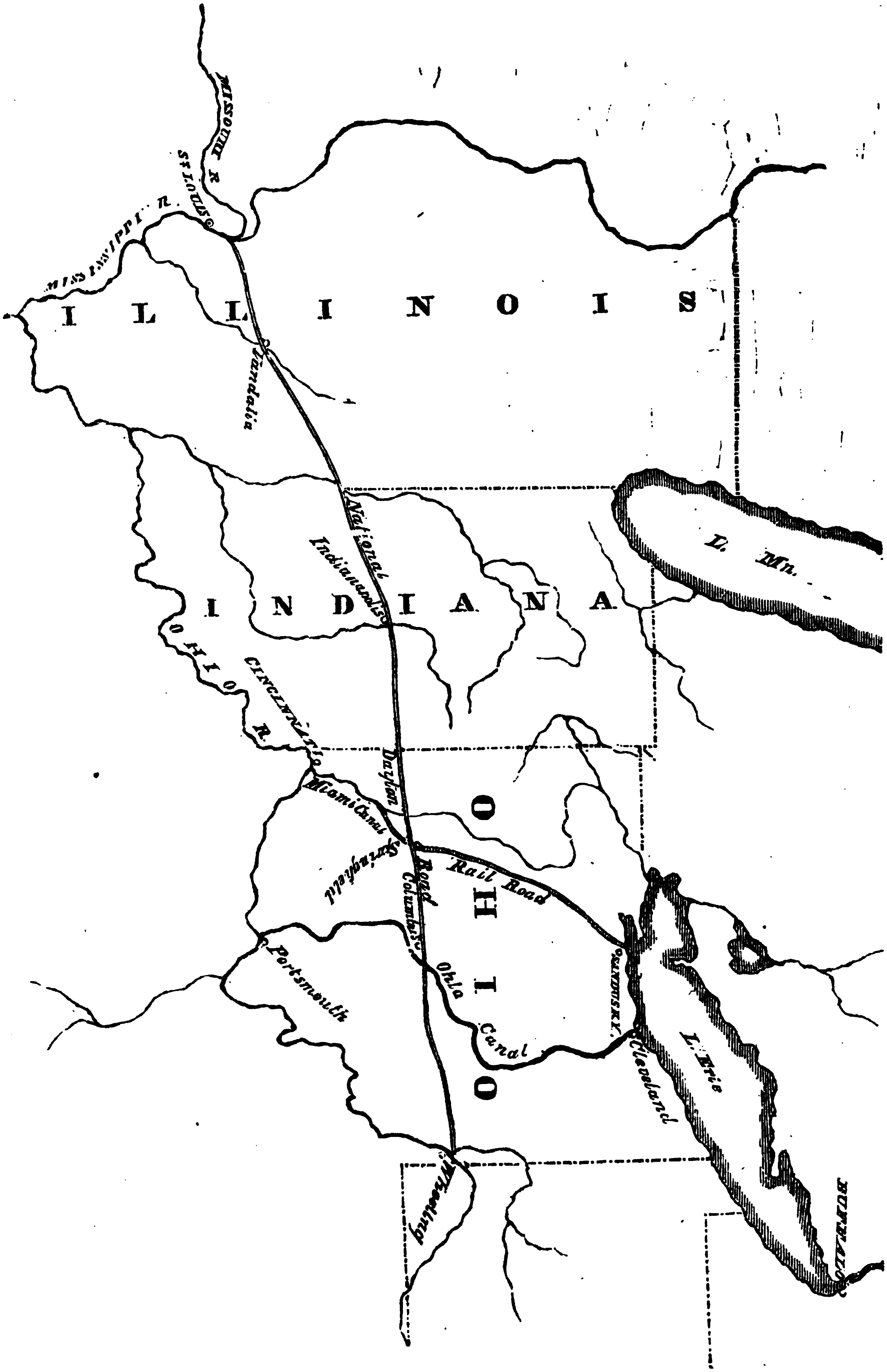
In the Report of the Canal Commissioners to the Legislature of Ohio, which will be found at pages 342, 3 and 4 in the journals of their session, the following facts are stated:

The saving by transportation on the Ohio Canal (which is 310 miles in length) over the ordinary mode of transportation by waggons is $231,004 and 95 cts—and the saving by means of the Miami Canal which is 65 miles in length is, $81,152 and 82 cts. But the parallel in favor of this route does not stop here.—The property that arrived at Cleaveland during the last year by the Ohio Canal was the following—wheat and flour amounting to 112,158 barrels; pork 13,801 barrels; whiskey 2150 barrels. During the same period of time the property that arrived at Cincinnati by the Miami Canal was as follows: flour 97,578 barrels; pork 19,758; whiskey 40,425 barrels.—Thus presenting the fact from official documents that in the exports of flour, pork and whiskey, the great staples of Ohio, there passed through the Miami Canal, which is only 65 miles in length, and yet connecting no important commercial point with Cincinnati, 29,662 barrels more than passed through the Ohio canal during the same time.

In the same report we have the following statement of the tools and water rents paid on each of those canals during the last year. On the Ohio canal, there were paid $82,867 42; and on the Miami canal, $49,928 81—still keeping the same relative proportion in favor of the latter, and the productiveness of the country through which it and the anticipated railroad is intended to form a line of communication.

Joseph Vance, } *Commissioners.*
Isaac Mills, }

Note. It is proper for us to state here, that there were but 270 miles of the Ohio canal, to wit: from Cleaveland to Chillicothe, open during the whole of the last season; the balance of the distance, from Chillicothe to the Ohio river, was not opened until towards the latter part of the season.


MISSOURI R
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Indianapolis
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OHIO R.
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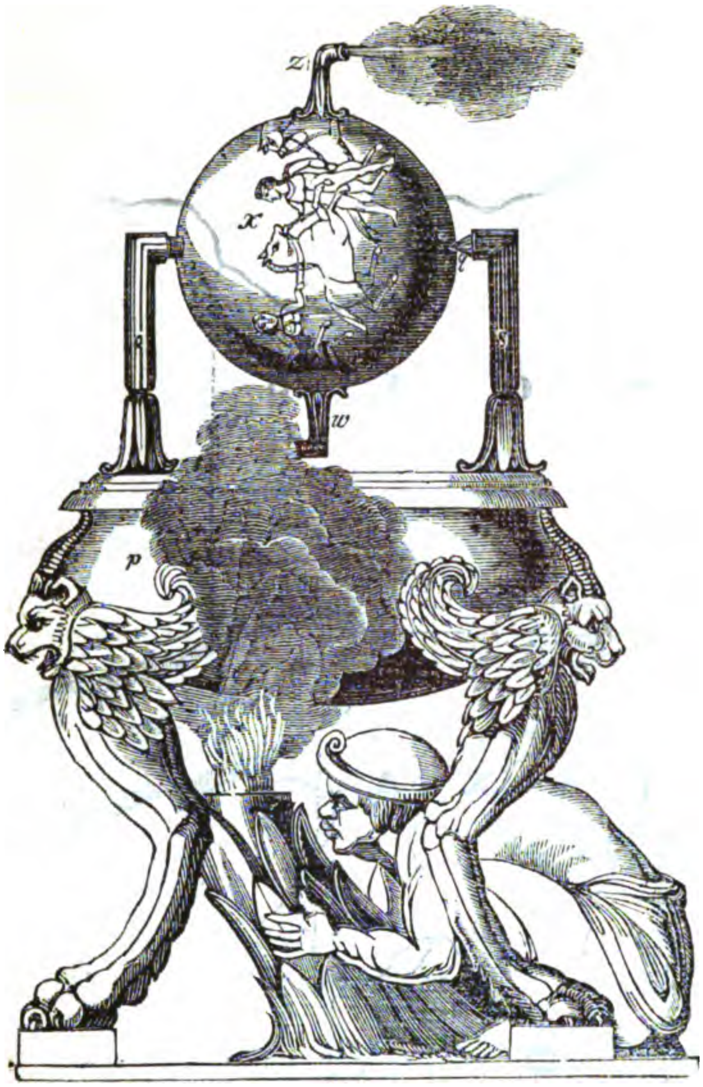
Dayton
Miami Canal
Springfield
Road
Columbus
Rail Road
OHIO
Portsmouth
Ohio
Canal
SANDUSKY
Cleveland
L. Erie
BUFFALO
Wheeling



Ancient Greek Steam Engine.—This machine is constructed on a similar principle to that described at page 582: a globe moved on a pivot, by means of steam conducted into it from a boiling caldron.

The caldron or heated vase, *p*, is to be closely covered with a lid; into which a pipe, *o*, is inserted at one side of its circumference. This pipe, after rising vertically for a short distance, is bent at right angles. On its horizontal end is placed a small globe, *x*, kept in its position by a pipe, *s*, also bent at right angles and fixed to the lid opposite to *o*, but terminating in a pivot, *q*, on which the little globe revolves. This globe is furnished with two small pipes, *z*, *w*, bent at their extremities and open. The steam from the boiling water in *p*, rising through the pipe *o*, is admitted at *s* into the globe; and issuing through the bent tubes *z*, *w*, causes the sphere to revolve as if it were "actuated from within by a spirit."[*]

That so ingenious a people as the Greeks should not have been led, by those direct experiments, to a practical application of the agent so exquisitely moulded by Hero into a mechanic power, may, in all probability, be ascribed to the operation of the same causes as those which have thrown a veil of deep and impenetrable obscurity on so many of the arts of antiquity. "The ancient philosophers," says an excellent mechanic, "esteemed it an essential part of learning to be able to conceal their knowledge from the uninitiated; and a consequence of their opinion, that its dignity was lessened by its being shared with common minds, was their considering the introduction of mechanical subjects into the regions of philosophy a degradation of its noble profession; insomuch, that those very authors among them, who were most eminent for their inventions, and were willing, by their own practice, to manifest unto the world these artificial wonders, were, notwithstanding, so infected by this blind superstition, as not to leave any thing in writing concerning the grounds and manners of these operations; by which means it is that posterity hath unhappily lost, not only the benefit of these particular discoveries, but also the proficiency of these arts in general. For when once learned men did forbid the reducing them to vulgar use and vulgar experiment, others did thereupon refuse those studies as being but empty and idle speculations; and the divine Plato would rather choose to deprive mankind of those useful and excellent inventions, than expose the profession to the ignorant vulgar."—[Stuart.]

On the Preservation of Machinery in Working Order. By G. K. O. To the Editor of the Mechanics' Magazine.

Sir,—Observing in your July number an article on the preservation of machinery in working order, I thought it not improper to suggest as a further means of preventing rust, that the several parts of a machine be enveloped in thin plates of zinc, which, by its superior affinity for oxygen, will prevent it from uniting with the iron.

Yours, &c. G. K. O.

Egyptian Egg-Oven.—It is a well-known fact, that eggs may be hatched by artificial means. The Egyptians, as well as those who have tried the experiment in Europe, have succeeded, by means of artificial heat, in hatching eggs without any aid from the mother birds.

According to the best descriptions of the Egyptian *mamal*, or hatching oven, it is a brick structure about nine feet high. The middle is formed into a gallery about three feet wide and eight feet high, extending from one end of the building to the other. This gallery forms the entrance to the oven, and commands its whole extent, facilitating the various operations indispensable for keeping the eggs at the proper degree of warmth. On each side of this gallery there is a double row of rooms, every room on the ground floor having one over it of precisely the same dimensions, namely, three feet in height, four or five in breadth, and twelve or fifteen in length. These have a round hole for an entrance of about a foot and a half in diameter, wide enough for a man to creep through; and into each are put four or five thousand eggs.

When the fires have been continued for eight or twelve days, according to the weather, they are discontinued, the heat acquired by the ovens being sufficient to finish the hatching, which requires in all twenty-one days, the same time as when eggs are naturally hatched by a hen.

The number of ovens dispersed in the several districts of Egypt has been estimated at 386; and it has been computed that a million of chickens are annually hatched, in this manner, in Egypt.—[People's Mag.]

Natural Wonder.—On the south side of the island (Mauritius) is a point called "the Souffleur" (the Blower), from the following circumstance: A large mass of rock runs out into the sea from the main land, to which it is joined by a neck of rock not two feet broad. The constant beating of the tremendous swell which rolls in has undermined it in every direction, till it has exactly the appearance of a Gothic building, with a number of arches in the centre of the rock, which is about thirty-five or forty feet above the sea; the water has forced two passages vertically upwards, which are worn as smooth and cylindrical as if cut by a chisel. When a heavy sea rolls in, it, of course, fills in an instant the hollow caverns underneath, and finding no other egress, and being borne in with tremendous violence, it rushes up these chimneys, and flies, roaring furiously, to a height of full sixty feet. The moment the wave recedes, the vacuum beneath causes the wind to rush into the two apertures with a loud humming noise, which is heard at a considerable distance. My companion and I arrived there before high water, and having climbed across the neck of rock, we seated ourselves close to the chimneys, where I proposed making a sketch, and had just begun, when in came a thundering sea, which broke right over the rock itself, and drove us back much alarmed. Our negro guide now informed us that we must make haste to re-cross our narrow bridge, as the sea would get up as the tide rose. We lost no time, and got back dry enough; and I was obliged to make my sketches from the main land. In about three-quarters of an hour the sight was truly magnificent. I do not exaggerate in the least when I say that the waves rolled in long and unbroken, full twenty-five feet high, till, meeting the head-land, they broke clear over it, sending the spray flying over to the main land; while from the centre of this mass of foam, the Souffleur shot up with a noise which we afterwards heard distinctly between two and three miles. Standing on the main cliff, more than a hundred feet above the sea, we were quite wet. All we wanted to complete the picture was a large ship going ashore.—[Journal of the Royal Geog. Soc.]

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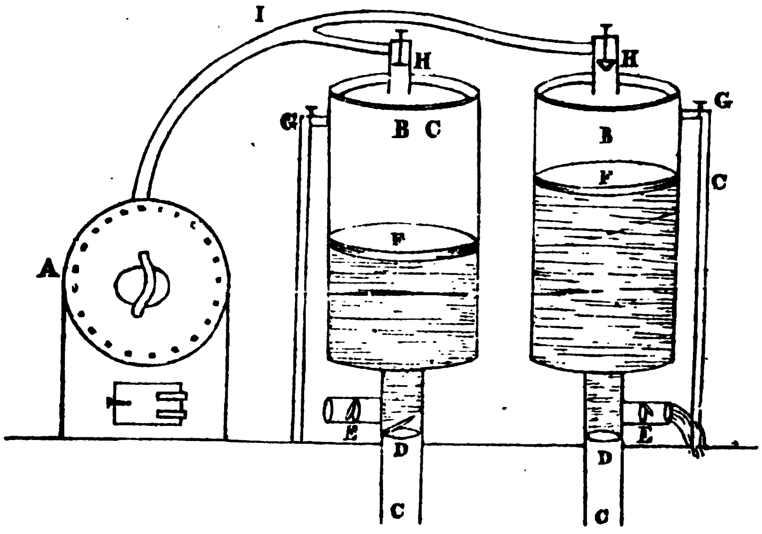
[*] The *Spiritalia* was first edited by Commandine, in 1571. It is also printed in the splendid folio collection of the works of the *Ancient Mathematicians*, published at Paris in 1693. The Greek text is accompanied with a Latin translation. The descriptions of the two machines we have described are in page 202 of that edition.

Human Life.—Pliny has compared a river to human life. I have never read the passage in his works, but I have been a hundred times struck with the analogy, particularly amidst mountain scenery. The river, small and clear in its origin, gushes forth from rocks, falls into deep glens, and wantons and meanders through a wild and picturesque country, nourishing only the uncultivated tree or flower by its dew or spray. In this, its state of infancy and youth, it may be compared to the human mind, in which fancy and strength of imagination are predominant—it is more beautiful than useful. When the different rills or torrents join, and descend into the plain, it becomes slow and stately in its movements; it is applied to move machinery, to irrigate meadows, and to bear upon its bosom the stately barge; in this mature state it is deep, strong, and useful. As it flows on towards the sea, it loses its force and its motion, and at last, as it were, becomes lost and mingled with the mighty abyss of waters.

One might pursue the metaphor still further, and say, that in its origin, its thundering and foam, when it carries down clay from the bank and becomes impure, it resembles the youthful mind, affected by dangerous passions. And the influence of a lake in calming and clearing the turbid water, may be compared to the effect of reason in more mature life, when the tranquil, deep, cool, and unimpassioned mind is freed from its fever, its troubles, bubbles, noise, and foam. And, above all, the sources of a river, which may be considered as belonging to the atmosphere, and its termination in the ocean, may be regarded as imaging the divine origin of the human mind, and its being ultimately returned to and lost in the Infinite and Eternal Intelligence from which it originally sprung.—[Davy.]



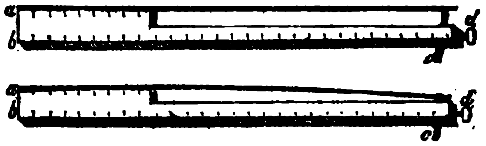
Steam Pump.—A, the boiler; B C and B, two condensers; C C, large tubes (two), through which the water is drawn into the condensers; D D, valves to prevent the water from returning; E E, valves, which act alternately, to prevent the air from passing in, and allow the water to pass out; F F, two wooden floats, that remain on the surface of the water, to prevent the steam acting on the water; G G, two small pipes, through which cold water passes to condense the steam; H H, steam valves, to admit and shut off the steam; I, steam pipe.

This drawing represents a newly invented machine, which we have witnessed in operation on a small scale. The object of it is to raise water, by forming a vacuum in the cylinders, by admitting a quantity of steam sufficient to supply the place of atmosphere (or rather of atmospheric pressure), and then condensing, which causes the cylinder to fill with water, and is discharged immediately when full; it is then filled with steam again, and the operation repeated, so that a continual water power is thus produced on an economical plan, both as regards the structure of the machinery and the saving in water. We think it important, and should be highly gratified to receive the opinions of any of our scientific correspondents on the subject.

Skin and Stomach.—Let these two important organs be attended to in a proper manner, and all the diseases of summer, cholera inclusive, will be avoided. The kind of attention to the skin consists in daily friction with a coarse towel or flesh brush —the tepid or warm bath twice, or, at least, once a week; or, in lieu of this, daily sponging the surface with salt and water, with the chill taken off it, and then rubbing with a dry coarse towel. The stomach will have justice done it by an avoidance of all alcoholic drinks; the moderate use of tea and coffee, if such be habitually taken; a due proportion of well boiled vegetables, with meat, roasted or boiled; and on occasions, in sanguinary temperaments in a feverish habit of body, a moderate share of ripe cooked fruits, to the exclusion, however, of cherries and plums. In all cases where disease is present in a place, no kind of fruit, nor any new or unaccustomed article of diet whatever, should be taken *in the evening*.—[Journal of Health]

Scale for Graduating Columns. By (?).
To the Editor of the Mechanics' Magazine.

Sir,—If the instrument which I describe below is not already known and in use, (which I am not aware of,) an acquaintance with it may be of advantage to some of your subscribers.



It is a scale for graduating columns, by which they are drawn with more accuracy and expedition than by the usual method.

It is composed of a flexible arm, *a*, and a fixed one, *b*. *a* is united to *b* at one end for about one-third the length of the instrument, and connected with it at the other by a small segment, *c*, which is secured at the desired point by a screw, *d*, in the end of the fixed arm. The screw is thus placed to allow the instrument to be used on either side. (?).

Rational Amusement.—The love of literature has prevailed from very early times among the inhabitants of the remote island of Iceland. There the way in which the evenings of their long winter are spent furnishes a most agreeable contrast to the miserable pot-house debauchery which fills up the leisure of too many uncultivated Englishmen, and proves the value of well regulated knowledge as an auxiliary to virtue. A distinguished traveller, who spent a winter in Iceland, has described a winter evening in an Icelandic family, as rendered instructive and pleasing in the highest degree by the prevailing love of useful knowledge among all ranks. As soon as the evening shuts in, the family assemble, master and mistress, children and servants. They all take their work in their hands, except one, who acts as reader. Though they have very few printed books, numbers write excellently, and copy out the numerous histories of their own island. The reader is frequently interrupted by the head of the family, or some of the more intelligent members, who make remarks and propose questions to exercise the ingenuity of the children or the servants. In this way the minds of all are improved in such a degree, "that," says my informant, "I have frequently been astonished at the familiarity with which many of these self-taught peasants have discoursed on subjects, which, in other countries, we should expect to hear discussed by those only who have devoted their lives to the study of science." Let me not omit to add, that the evening, thus rationally and virtuously begun, is, by these well-instructed people, closed with an act of family devotion.—[From an excellent little work just published, "Bullar's Hints and Cautions in the Pursuit of General Knowledge."]

Babbage on the Economy of Manufactures.

[Continued from page 633.]

ON THE DURATION OF MACHINERY.

261. The time during which a machine will continue effectually to perform its work, will depend mainly upon the perfection with which it was originally constructed, upon the care taken to keep it in proper repair, particularly to correct every shake or looseness in the axes, and upon the small mass and slow velocity of its moving parts. Every thing approaching to a blow, all sudden change of direction, is injurious. Engines for producing power, such as wind mills, water mills, and steam engines, usually last a long time.* But machinery for producing any commodity in great demand seldom actually wears out; new improvements, by which the same operations can be executed either more quickly or better, generally superceding it long before that period arrives: indeed, to make such an improved machine profitable, it is usually reckoned that in five years it ought to have paid itself, and in ten to be superceded by a better.

"A cotton manufacturer," says one of the witnesses before a Committee of the House of Commons, "who left Manchester seven years ago, would be driven out of the market by the men who are now living in it, provided his knowledge had not kept pace with those who have been during that time constantly profiting by the progressive improvements that have taken place in that period."

262. The effect of improvements in machinery seems incidentally to increase production, through a cause which may be thus explained. A manufacturer, making the usual profit upon his capital invested in looms or other machines in perfect condition, the market price of making each of which is a hundred pounds, invents some improvement. But this is of such a nature that it cannot be adapted to his present engines. He finds upon calculation, that at the rate at which he can dispose of his manufactured produce, each new engine would repay the cost of its making, together with the ordinary profit of capital, in three years: he also concludes from his experience of the trade, that the improvement he is about to make will not be generally adopted by other manufacturers before that time. On these considerations, it is clearly his interest to sell his present engines, even at half price, and construct new ones on the improved principle. But the purchaser who gives only fifty pounds for the old engines has not so large a fixed capital invested in his factory, as the person from whom he purchased them; and as he produces the same quantity of the manufactured article, his profits will be larger. Hence, the price of the commodity will fall, not only in consequence of the cheaper production by the new machinery, but also by the more profitable working of the old, when sold at a reduced price. This change, however, can be only transient; for a time will arrive when the old machinery, although in good repair, must become worthless. The improvement which took place not long ago in frames for making patent-net was so great, that a machine, in good repair, which had cost £1200, sold a few years after for £60. During the great speculations in that trade the improvements succeeded each other so rapidly, that machines which had never been finished were abandoned in the hands of their makers, because new improvements had superceded their utility.

263. The durability of common watches, when well made, is very considerable. One was produced, in "*going order,*" before a committee of the House of Commons to inquire into the watch trade, which was made in the year 1660; and there are many of ancient date, in the possession of the Clock-makers' Company, which are actually kept going. The number of watches manufactured for home consumption was, in the year 1798, about 50.000 annually. If this supply was for Great Britain only, it was consumed by about ten and a half millions of persons.

264. Machines are, in some trades, let out to hire, and a certain sum is paid for their use in the manner of rent. This is the case amongst the frame-work knitters: and Mr. Henson, in speaking of the rate of payment for the use of their frames, states, that the proprietor receives such a rent that, besides paying the full interest for his capital, he clears the value of his frame in nine years. When the rapidity with which improvements succeed each other is considered, this rent does not appear exorbitant. Some of these frames have been worked for thirteen years with little or no repair. But circumstances occasionally arise which throw them out of employment, either temporarily or permanently. Some years since, an article was introduced called "*cut-up work,*" by which the price of stocking frames was greatly deteriorated. From the evidence of Mr. J. Rawson, it appears that, in consequence of this change in the nature of the work, *each frame could do the work of two,* and many stocking frames were thrown out of employment, and their value reduced *full three-fourths.**

This information is of great importance, if the numbers here given are nearly correct, and if no other causes intervened to diminish the price of frames; for it shows the numerical connection between the increased production of those machines and their diminished value.

The great importance of simplifying all transactions between masters and workmen, and of dispassionately discussing with the latter the influence of any proposed regulations, is well exemplified by a mistake into which both parties unintentionally fell, and which was productive of very great misery. Its history is so well told by William Allen, a frame-work knitter, who was a party to it, that an extract from his evidence, as given before the Frame-work Knitters' Committee of 1812, will best explain it.

"I beg to say a few words respecting the frame-rent: the rent paid for lace-frames, until the year 1805, was 1*s.* 6*d.* a frame per week; there then was not any very great inducement for persons to buy frames and let them out by the hire, who did not belong to the trade; at that time an attempt was made, by one or two houses, to reduce the prices paid to the workmen, in consequence of a dispute between these two houses and another great house. Some little difference being paid in the price among the respective houses, I was one chosen by the workmen to try if we could not remedy the impending evil: we consulted the respective parties, and found them inflexible; these two houses, that were about to reduce the prices, said that they would either immediately reduce the price of making net, or they would increase the frame-rent: the difference to the workmen was considerable, between the one and the other; they would suffer less, in the immediate operation of the thing, by having the rent advanced, than the price of making net reduced. They chose at that time, as they thought, the lesser evil, but it has turned out to be otherwise; for, immediately as the rent was raised upon the per-centage laid out in frames, it induced almost every person, who had got a little money, to lay it out in the purchase of frames; these frames were placed in the hands of men who could get work for them at the warehouses; they were generally constrained to pay an enormous rent, and then they were compelled, most likely, to buy of the persons that let them the frames their butcher's-meat, their grocery, or their clothing: the encumbrance of these frames became entailed upon them: if any deadness took place in the work they must take it at a very reduced price, for fear of the consequences that would fall upon them from the person who bought the frame; thus the evil has been daily increasing, till, in conjunction with the other evils crept into the trade, they have almost crushed it to atoms."

265. The evil of not assigning fairly to each tool, or each article produced, its *proportionate value,* or even of not having a perfectly distinct, simple, and definite *agreement* between a master and his workmen, is very considerable. Workmen find it difficult to know the probable produce of their labor; and both parties are often led to adopt arrangements, which, had they been well examined, would have been rejected as equally at variance in the results with the true interests of both.

266. At Birmingham, stamps and dies, and presses, for a great variety of articles, are let out: they are generally made by men possessing small capital, and are rented by workmen. Power also is rented at the same place. Steam engines are erected in large buildings containing a variety of rooms, in which each person may hire one, two, or any other number of horse power, as his occupation may require. If any mode could be discovered of transmitting power, without much loss from friction, to considerable distances, and at the same time of registering the quantity made use of at any particular point, a considerable change would probably take place in many parts of the present system of manufacturing. A few central engines to produce power might then be erected in our great towns, and each workman, hiring a quantity of power sufficient for his purpose, might have it conveyed into his own house; and thus a transition might in some instances be effected, if it should be found more profitable, from the system of great factories back to that of domestic manufacture.

267. The transmission of water through a system of pipes might be employed for the distribution of power, but the friction would consume a considerable portion. Another method has been employed in some instances, and is practised at the Mint. It consists in exhausting the air from a large vessel by means of a steam-engine. This vessel is connected by pipes, with a small piston, which drives each coining press; and, on opening a valve, the pressure of the external air forces in the piston. This air is then admitted to the general reservoir, and pumped out by the engine. The condensation of air might be employed for the same purpose; but it must be admitted that there are some unexplained facts relative to that elastic fluid, which require farther observations and experiment before it can be used for the conveyance of power to any considerable distance. It has been found, for instance, in attempting to blow a furnace by means of a powerful water wheel driving air through a cast-iron pipe of above a mile in length, that scarcely any sensible effect was produced at the opposite extremity. In one instance, some accidental obstruction being suspected, a cat put in at one end found its way out without injury at the other, thus proving that the phenomenon did not depend on interruption within the pipe.

268. The most portable form in which power can be condensed is, perhaps, by the liquefaction of the gases. It is known that, under considerable pressure, several of these became liquid at ordinary temperatures. Carbonic acid, for example, requires a pressure of sixty atmospheres to reduce it to a liquid state. One of the advantages attending the use of these fluids is, that the pressure exerted by them remains constant until the last drop of liquid becomes gaseous. If either of the elements of common air should be found to be capable of reduction to a liquid state before it unites into a corrosive fluid with the other ingredient, then we shall possess a ready means of conveying power in any quantity and to any distance. Probably hydrogen will require the strongest compressing force to render it liquid, and may, therefore, possibly be applied where still greater condensation of power is wanted. In all these cases the condensed gases may be looked

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* The return which ought to be produced by a fixed steam engine employed as a moving power is frequently estimated at ten per cent. on its cost.

* Report from the Committee of the House of Commons on the Frame-Work Knitters' Petition, April, 1819.

pon as enormous springs, which have been wound up by the exertion of power, and which will deliver the whole of it back again when required. These springs of nature differ in some respects from the steel springs formed by our art; for in the compression of the natural springs an enormous quantity of latent heat is forced out, and in their return to the state of gas an equal quantity is absorbed. May not this very property be employed with advantage in these applications?

The mechanical difficulty which will remain to be overcome will consist in the valves and packing necessary to retain the fluids under the pressures to which they will be submitted; and the effect of heat on these gases has not yet been sufficiently tried to lead us to any very precise notions of the additional power which its application to them will supply.

The elasticity of air is sometimes employed as a spring instead of steel: in one of the large printing presses the momentum of a considerable mass of matter is destroyed, by making it condense the air included in a cylinder, by means of a piston, against which it impinges.

269. The effect of competition in cheapening articles of manufacture sometimes operates in rendering them less durable. When such articles are conveyed, for consumption, to a distance from the place where they are made, if they are broken, it often happens, from the different price of labor, that it is more expensive to mend the old than to purchase a new article. Such is usually the case, in great cities, with some of the commoner locks, with hinges, and with a variety of articles of hardware.

Singular Species of Corn.—We have now in our office, (where our citizens and farmers are requested to call and see it,) a most singular species of corn. The history of this rare freak of nature is substantially as follows. About three years ago, Mr. Carrico, living in Gallatin county, Kentucky, planted some of the common Indian corn in the neighborhood of a swampy piece of land, which was grown over with a thick strong grass resembling *sedge* grass. In the fall of the year, when he was gathering his corn, he was surprised to find that ears of corn were growing and ripening upon the grass, and that on the blades of the grass separate grains were growing. Struck by the singularity of the circumstance, he carefully preserved the grains, and planted them in the next spring. The result was extraordinary, producing a growth partaking of the qualities both of the grass and the corn, and superior to both as forming a third article very advantageous to stock farmers. The stalks in our office present most remarkable appearances.

The *tassel* does not bear any resemblance to the *corn tassel*, but is more like the heads of coarse grass, the blades are long and very tender, resembling more of blades of oats than of corn. Upon the extremities of these blades separate grains of corn enclosed in a husk, presenting the appearance of hazel nut burs, are found, and to the bodies of the stalks more perfect ears of corn are attached. The stalks themselves are long and slender, and not unlike the wild rye of the country, only stronger and more substantial. We believe that this grain is at least one new thing under the sun, and, unlike most novelists, it promises to be useful.—[Commonwealth, Frankfort, Ky.}

Silk.—"The Shakers, near Lexington, Ky. have commenced the raising of silk-worms, and the preparing and manufacture of silk. Some of their goods have been received at Philadelphia, and been much extolled. The Shakers are so diligent in application and patient of labor, that, if they take up this business seriously, it will certainly succeed in our country."

We have been permitted, during the past summer, to witness the process of silk culture, through all its varied and progressive stages. And it was truly a delightful privilege, for in no other way have we seen the beauties and perfections of nature's husbandry so wonderfully displayed. Though little is now known of the culture of silk, the time cannot be distant when our country will embark in a business, for the successful prosecution of which we enjoy so many facilities. It is an employment in which females and children may be pleasantly and profitably engaged. The Mulberry is easily cultivated, from indifferent soil, and is highly ornamental. But little capital is required to commence and carry on the manufacture of silk.

In July last, Mrs. Parmentier presented Mr. Cruttenden, of the Eagle, a few Cocoons, each of which produced a miller or moth. These paired, after which the females produce their eggs, and these, having accomplished the purpose of their creation, died? The eggs, after a few days exposure to a warm atmosphere, produce the silk worm, over which tender leaves of the mulberry are laid, and to which they adhere, and soon commence eating. The worm requires fresh leaves three times a day, and continues eating about thirty-two days, when, having become three inches long, it is prepared to spin its cocoon. The last process, that of spinning the cocoon, is beautiful beyond the power of description. The worm mounts upon a bush, and commences the weaving itself into a web of brilliant silken fibres, which, in the course of six or eight days, is completed, and constitutes the cocoon, from which the silk is wound. And thus, in the short space of six weeks, by means which mock all the efforts of art and science, the raw mulberry leaf is converted into rich and durable silk.—[Albany Evening Journal.]

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 24th of September, to the 7th day of October 1833, *inclusive.*

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Sept'r 24..	10 a. m.	53	30.01	N by W	light	WSW	fair
	10	60	30.02	WSW	..	..	..
	2 p. m.	68	29.97	..	moderate	..	..
	6	64	29.92	..	light		clear
	10	58	29.98				..
" 25..	6 a. m.	55	30.00	WSW—WNW	light		..
	10	64	30.04	SW	..	WSW	fair
	2 p. m.	72	30.00	..	..	..	..
	6	69	30.00	..	..	..	..
	10	66	30.00		..		clear
" 26..	6 a. m.	62	29.99	SW—WSW	..	..	fair
	10	69	29.98	SW by W	..	..	..
	2 p. m.	75	29.90	SW	moderate	..	..
	6	70	29.86	..	..		clear
	10	66	29.86		..		..
" 27..	6 a. m.	63	29.84	WSW	..		..
	10	70	29.89	..	..	..—WNW	fair
	2 p. m.	78	29 88	W—WSW	..	..	.. —with brisk scuds from WNW
	6	76	29·90	WSW	..	NW—WSW	..
	10	73	30.—	..	lights	WSW	..
" 28..	6 a. m.	62	30.14	ENE	..	W by S	..
	10	65	30.18	E—SE	moderate	.. / SW	..
	2 p. m.	67	30.15	SE—ESE	..	W by S / SE	.. —cloudy at 5.30
	6	65	30.15	SE	..	W by S / S brisk	cloudy
	10	66	30.10	..	..	S by W	..
" 29..	6 a. m.	68	30.08	SSE	..	WSW / SSW	fair
	10	75	30 08	..	..	..	..
	2 p. m.	78	30.04	..	..	SW	..
	6	75	30.02	..	..	WSW	.. —cloudy at W
	10	70	30.06	..	..	..	..
" 30..	6 a. m.	63	30.17	NNW	ligqt—mod.	..	..
	10	70	30.23	..	moderate	..	..
	2 p. m.	74	30.21	..	..	..	..
	6	70	30.21	..	light	..	..
	10	67	30.24	..			..
October 1..	6 a. m.	58	30.27	ENE	moderate	..	hazy —cloudy
	10	64	30.27	..	..	.. / ENE	cloudy
	2 p. m.	62	30.16	..	fresh	ENE	rainy —rain
	6	57	30.08	..	..	..	rain
	10	60	30.01	—SSE	..—gale		..
" 2..	6 a. m.	69	29.80	..—S—SSW	moderate	SW—WSW	.. —cloudy —rainy
	10	78	29.80	WSW—W	..	WSW	fair
	2 p. m.	72	29.77	WSW	..	..	..
	6	66	29.81	W by S	..	..	..
	10	60	29.89	..	..		clear
" 3..	6 a. m.	56	29.95	WSW	..		..
	10	63	29.98	..	..	—WSW	.. —fair
	2 p. m.	67	29.98	..	..	..	fair
	6	63	30.01	..	..	..	..
	10	58	30.07	..	..	..	..
" 4..	6 a. m.	51	30.20	NNW	..	..	..
	10	57	30.27	..	..	NNW	.. —small scudt from NNW
	2 p. m.	58	30.28	N by W	..	NW	..
	6	56	30.35	N	light		clear
	10	53	30.40				..
" 5..	6 a. m.	48	30.52	N by W-NE-E	..		..
	10	56	30.52	ESE—NW	faint	ESE	fair
	2 p. m.	62	30.49	SSW—SE	light	SE	..
	6	58	30.48	SSE	..	SSE	..
	10	56	30.45		calm		..
" 6..	6 a. m.	58	30.37		..	SSW	cloudy
	10	64	30.37	SW—S	light	SW	.. —fair
	2 p. m.	68	30.31	SSW	..	..	..
	6	62	30.28	..	..	..	..
	10	61	30.28		..		..
" 7..	6 a. m.	58	30.25	WSW—SSW	faint	WSW	hazy
	10	63	30.24	SSW—ESE	..	SW	fair
	2 p. m.	67	30.22	SE	..	..	cloudy
	6	64	30.19	..	calm	..	..
	10	61				..	..

Maximum height of the barometer for September 30.20 in.—Minimum, 29.84 in.—Range, 0.46 in.

The observations of winds for September result as follows: From the North-Eastern quarter, 25½—from the South Eastern, 13½—South-Western, 64½—and North-Western, 29½.

The higher currents as observed by the course of the highest clouds, show the following results: From the North-Eastern quarter, 9—from the South-Eastern, 3—South-Western, 89½—and North-Western, 20½.

passes. The wantoness of these attacks as regards our country is perfectly unaccountable, considering the real estimation in which the many excellent and even noble traits of the British character are held among us. It can only be attributed to a constitutional obtusity of feeling, which makes them unconscious of the bitter outrages they offer to the very noblest attribute of our nature—a proper self-respect. As an instance of this, the gross insult offered to a whole nation in the following passage, evidently intended to be complimentary, might be quoted among others from the volume before us:

> Yet no apprehensions could be more unfounded than those of that man; *for however unlike civilized nations they may be in other respects*, in the humanity of their conduct towards such English soldiers as fell into their hands, the Americans can be surpassed by no people whatever.

Now the man who flings this gratuitous piece of insolence in our teeth is a *clergyman*, a man of refined education, and at this very moment, from former works he has published, one of the most popular foreign writers among our countrymen. His History of the Bible is incorporated with Harpers' American Family Library, and therefore widely disseminated: his Subaltern in Spain was read every where. He might have travelled thousands of miles on this continent, and the mere mention of his name as the author of the first work would have procured him the kindest attention among the many hundreds of poor people to whom the cheapness of his work has made it known; while for ten readers among his own countrymen he would find twenty among ours. We do not ask how could a person of liberal education, a gentleman, a British officer, put forth a sentiment so offensive to those who, having enjoyed the same advantages here as he has at home, may move with him in the most accomplished circles on the continent? but we do ask, how did that man—that minister of God—that interpreter of the mercies revealed to us in Heaven's written language; how did he dare to outrage the honest pride of the humble readers of his book to whom we have alluded, by uttering a sentiment that would turn the kindness of their feelings to gall? That single sneer from his pen will sink deeper than a thousand random falsehoods put forth elsewhere as facts about the country, and kindle more vindictive feeling than the holy teaching of his life can allay.

It may seem absurd to grow warm upon a theme so hacknied; but we confess it is one that we never approach with patience. The subject, too, though old, is far from worn out. They who first called it into play are forever imparting new vigor to it, even while calling on us to forget its existence. The number of libellous works upon our country have doubled since Washington Irving wrote his much admired paper on conciliation; and now not content with putting forth these professed treatises of calumny, they infuse their venom into works like those before us, where one looks only for amusement. Shall such things go abroad without our indignant disclaimer? Shall our children while seeking harmless amusement be allowed to imbibe a contempt for their country without warning them from these polluted sources? Shall such puppies as Hall and Hamilton be fêted and caressed again thoughout the country, and domesticated in our houses as formerly? In a word, shall our countrymen be at once the prey and the scorn of these Ishmaelites forever?

Recrimination is alway an ungrateful task; but there are some poisons so inveterate that recourse to others equally active can alone expel them from the system. *

Outre Mer; A Pilgrimage beyond the Sea; No. 1; *Boston*, Gray & Co.—This is a beautifully printed pamphlet about the size of "The Sketch Book" as originally published, which work it also resembles in its general design. We shall look for the next number with some interest; and prefer making up our opinion then of a work which, though written in a happy and polished style, evinces as yet but little of the originality of the celebrated model upon which it appears to be formed. *

Inquiries concerning the Intellectual Powers, by J. Abercrombie, M. D.; prepared for the use of Academies, by Jacob Abbot: *Hartford*, F. J. Huntingnon.—The manner in which we have already spoken of the celebrated work of Dr. Abercrombie here, renders it unnecessary to add now any recommendation of it, as admirably adapted to the purposes of education. To such an end, the edition before us, prepared as it is with explanations for the use of pupils, is especially suitable. There is an analysis of each page in the margin, which will be found of great assistance to the teacher, and the well written explanatory remarks in an introduction of some length, may be recommended to every one who would successfully pursue a study which must be salutary to every mind brought within its influence.

The work, in publishing phrase, is very handsomely "got up;" and the two first paragraphs of the editor's introduction will, in the just view they take of the study of Intellectual Philosophy, show how capable was the promoter of the present edition of introducing the work properly into all liberal systems of education. He pretends merely to explain the nature of the science, not to render it easy; rightly arguing that the very difficulties of the study of intellectual philosophy are among the chief sources of benefit to be derived from it: for it is by encountering and overcoming these difficulties that intellectual strength is acquired—just as, to use his own apt illustration, the exertion necessary to perform the feats of the gymnast, is the means by which his physical force is enhanced, and the advantage of such efforts secured. *

The Guardian. a semi-monthly Magazine, No. 3.—This handsomely printed periodical, "addressed to the younger members of society," improves in interest as the publication proceeds. The essays, selections and criticisms in the present number indicate resources in the Editors which promise well for their excellent project. A class of young contributors, whose communications should be subject to the freest supervision on the part of the editors, would perhaps add to the interest of the work and promote its circulation among the readers to which it is particularly addressed. *

FOREIGN INTELLIGENCE.

In *Great Britain*, the King prorogued Parliament in person on the 28th August. His speech on that occasion is characterized by the London Spectator as having "a strong resemblance to those puffing announcements which theatrical managers are wont to make at the foot of playbills, where every piece is declared to have been received with unbounded applause by crowded and fashionable audiences. But as it not unfrequently happens, that, instead of being applauded, the plays have in fact been all but damned; so, many of the measures of the past session, which their authors, and the authors of the royal speech, affect to regard with infinite complacency, have in reality been barely tolerable in the eyes of the British public."

The recognition by England of *Donna Maria* as Queen of Portugal took place at Lisbon on 15th Aug., when Lord Wm. Russell delivered his credentials to *Don Pedro*, as minister to the young Queen.—Active interference in her behalf however was not contemplated; for when Don Pedro asked whether he might depend upon British support in case of an attack upon Lisbon, he was distinctly assured by Lord Wm. Russell, that unless any other foreign Power should interfere in behalf of Miguel, no active assistance could be rendered to the Queen. The moral effect of the recognition, which would moreover be doubtless soon followed by that of France, joined to the prosperous state of the Queen's affairs, must soon, we apprehend, decide the controversy. Don Pedro has summoned the national Cortez to meet, in order to nominate a Regency, and to determine upon a suitable marriage for the Queen. Meanwhile *Saldanha*, by an effective and victorious sortie on the 18th from Oporto, had completely freed that city from the remainder of Bourmont's army left to beleaguer it, and in consequence troops had been despatched thence to aid in the defence of Lisbon in case of attack. Apprehension on that score however had much declined. Bourmont's post was at Coimbra, about 130 miles from Lisbon, and his whole force did not exceed 10,000 men. *Villaflor* with his troops, equal in number and in high heart and hope, had possessed himself of Wellington's famous lines of Torres Vedras in advance of Lisbon, so as to meet there any attack that might be hazarded. The latest Lisbon dates are of the 20th August.

From *Madrid* the dates were to the 21st August at which time the King was still living. A letter we insert from the London Times explains the actual condition of things in Spain. Another war of succession seems inevitable on the demise of the King.

Of France the following account is given by a correspondent of the London Spectator. The facts developed in this letter, of the remarkable increase in the circulation of liberal and republican papers, such as the *National* and the *Tribune*, and of the proportionate falling off in that of the ministerial papers, are very significant indeed.

> "Paris, 29th August.
>
> "The public feeling against Louis Philip increases daily. Do not believe the accounts which appear in the French Ministerial Papers, of his popularity.—Nothing can be more contemptible than his party; and be assured, that the moment the present favorable state of commerce takes a turn,—which, in the natural course of things, it must do soon,—these feelings of contempt and dissatisfaction which are now kept under, will be loudly declared. Louis Philip must be aware of this; and is trying to strengthen his interest with England: but the real alliance between England and France, which is becomiug daily more intimate, is with the People—not the Governments.
>
> "Among other things now talked of, is a proposal for the next session, to the Chambers to remove the timbre (stamp duty) on Newspapers. Ministers have discovered that their *loi de cautionnement* (the security lodged in the hands of Government before a new paper can start) is not sufficient to prevent new and cheap papers from making their appearance; and as it happens that nineteen out of twenty of these papers are Anti-Ministerial, they will of course endeavor to put them down. But let them beware! The attempt to *bastillize* Paris has hitherto failed, and it has excited public indignation against Ministers. Let them attempt to suppress Newspapers, and the *coup d'état*, although they should even succeed in getting it passed with the sanction of a corrupt and imbecile Chamber, will hurl Philip from his throne. Nothing can stop the Press here; and no paper, to succeed, can be Ministerial. The *Constitutionnel*, by supporting for a time the Juste Milien system, has lost 10,000 subscribers in less than three years. The *Journal des Debats*, which was rapidly rising whilst it was Liberal, can hardly keep its ground, although it is the official paper; and as to the other Ministerial Papers, their circulation has diminished one half. I have just procured, from the Stamp-office, the returns of the daily circulation of some of the papers for 1830 and 1833. It is worth attention—

	In 1830.	In 1833.
Constitutional, - -	23,333	13,333
Journal des Debats, - -	14,600	14,000
Temps (this paper fell as soon as it became what is called moderate,) - -	7,750	4,240
Courrier Français (Liberal, inclining to Republicanism,)	4,000	6,700
National (Republican,) -	2,300	4,850
Tribune* (Ultra Republican,)	800	3,600
Gazette (Ministerial,) -	9,750	7,508
Quotidienne (Carlist,) -	4,430	4,800

* There has been ninety-two prosecutions against this paper, and five of its editors are in prison.

> "I have not time to make any reflections on this

statement: you may perhaps, do so; and from your knowledge of French politics, you will be able to do it with effect.

"There is a private letter here from a friend of the Duke de Broglie, now in London, stating that Talleyrand must be speedily replaced, as he is breaking rapidly in health, and sometimes appears to be affected in mind.

"There is no news from Spain worthy of serious attention. A Council was held before the King left Paris, at which it was agreed to do every thing possible to promote Pedro's return to Brazil."

We find nothing authentic and no additional particulars even of the alleged insurrectionary movements at Naples.

The Emperor of Austria and the King of Prussia are holding a conference at the fortress of Thierenstadt, in Saxony. They are said to talk very earnestly together, but no one seems to know what it is all about.

The Russian Government has published a manifesto in defence of the subjugation of Poland. It is a labored, but unsuscessful attempt, to prove that the Treaty of Vienna has not been broken by her late proceedings towards that country.

The papers also contain a Catechism, prepared for the use of the schools and churches in the Polish provinces of Russia, in which the main doctrine inculcated is not only implicit obedience to the Emperor, but the absolute *worship* of him, under all circumstances and in all places. It is a document full of the most impious servility, worthy of the quarter from which it proceeds.

The dissolution of Parliament in England was the signal for the dispersing immediately of Ministers. They have had a long and laborious session of it.—On the last day a series of questions of a good deal of interest, on the foreign policy of England, was put to Lord Althorp, and answered. The treaty between this country and Holland referred to, we have not before heard of. A change is to take place in Ireland, whence Lord Anglesea returns on the plea of ill health, and is succeeded as Lord Lieutenant by the Marquis Wellesley.

The negotiations for the settlement of the Belgian question had again been broken off. The navigation of the Scheldt and the partition of Luxemburg are still the points in dispute.

London, Sept. 3.—We insert in another column a protest of the Duke of Wellington against the bill for the emancipation of the negro slaves in our colonies, in which his Grace has been fortunate to find three other noble lords intrepid enough to join him.

Courier of 28th.—The Paris Papers of Monday, received this morning, contain accounts from Algiers, which describe the French possessions on that coast to be held on very uncertain tenure. The communication between the town of Mostaganem and Oran had been cut off by the Arabs, who surrounded the former place and threatened an assault.

The German papers received this morning state that Russia has entered into a commercial treaty with the Porte, and the new equipments and arms of the Sultan's army are to be furnished by Russia. Admiral Roussin, the French Ambassador at Constantinople, it is asserted, will shortly be supplanted by General Guilleminot.

[*From the Canton Courier of 4th May.*]

We have the greatest pleasure in announcing the safe arrival of the *Sylph* from the East Coast, after an absence of seven months. Serious apprehensions were entertained latterly for her safety, and her arrival has relieved the friends of those on board from their anxiety. It is reported that the Sylph proceeded as far as Latitude 41° 30 North, where her crew suffered severely from the intense cold, and encountered much tempestious weather, with snow storms, losing four men from the effects of the climate. The Sylph got ashore in the Gulf of *Pe-che le*, and lay 52 hours aground; the sick were landed, the ballast thrown overboard, and the vessel floated without having been materially injured in her hull. We hear that she has brought a large amount of treasure exchanged for her Opium in the course of her cruise.

The Hong merchants Houqua and Mouqua have lately received the decoration of peacock's feathers to be worn dependent from the summit of the cap of ceremony. These honorary insignia have been bestowed by the Emperor in consequence of the contributions of those gentlemen to the fund for defraying the expenses of the late *Leen chow* war. A peacock's feather here is the order of a species of knighthood awarded to meritorious individuals.

SUMMARY.

The Annual Commencement of Columbia College was celebrated on Tuesday, and notwithstand the storm there was a respectable audience in the Church. We cannot refrain from expressing the gratification we derived from listening to the various orations delivered. They were, as compositions, almost without exception, in good and manly taste, justly conceived and reasoned, and imbued with sound and honerable feeling. They were spoken, several of them, with remarkable talent; and the exhibition as a whole could not, we are quite sure, be surpassed—we a little doubt if it could be equalled—at any College in the United States; and yet, strange to say, Columbia College—which rears such scholars—which has a faculty of admitted ability, and whose scheme of instruction embraces, as will be seen by the various departments to excellence in which special honors are awarded, all that goes to constitute a liberal and classical education—notwithstanding all this, Columbia College, identified in her whole existence and history with the prosperity and character of this city, is coldly looked upon, and her ample halls receive few students as compared with her means of instruction, and with the numbers seeking education. We speak confidently of her means of instruction, because we know them, and because we know too that as compared with those offered by any other collegiate institution, in or out of the State—possibly with the exception of Harvard—they are unequalled.

The Portsmouth (Ohio) Courier of the 25th ult., in copying, and calling the attention of its readers to an article published in this paper some weeks ago, on the great present, and greater future, advantages of the connected line of canal navigation through this State and Ohio, makes this statement, shewing the substantial reason of preferring the Erie and Ohio Canal route to any other for the transportation of goods to the West:—

Though the increase of business on our canal has been vast, and beyond the anticipation of the most sanguine among us, there are many who are not aware of the advantages of the Erie and Ohio and Erie Canals as channels of commercial intercourse between the eastern and western markets; and who consequently have been losers both in money and in time, which is as valuable, by taking other routes possessing unequal facilities. In illustration, we need only mention one fact, communicated by a merchant of Louisville, who passed through Portsmouth a few days since, *along with his goods.* He stated that making all possible allowance for the time necessary between this place and Louisville, and a delay here of two or three days, which seldom occurs now, and never at the usual stage of water, he would arrive at home with his goods in twenty-one days from New York, at the low cost of *two dollars and seventy-five cents* per hundred. It may be proper to state, that this amount includes all expenses, he having exercised no agency in their progress, farther than if he had not been with them. He also stated that the lowest offer he had for transporting them by the other routes as far as Wheeling, was *two dollars and seventy-five cents* per hundred; to which if we add an estimate of at least 15 days as the time requisite for a keelboat to perform the trip down, and *one dollar* per hundred more for the freight, the reader will be able to appreciate the relative advantages of the routes.

John W. Campbell district Judge of the U. S. for Ohio, died at Delaware (Ohio) on 24th ult.

Emigration—Continues to flow in upon us. Within the last week, not less than one thousand sturdy looking emigrants have been landed in this city. Uncle Sam's land goes off well.—[Detroit Courier,]

We have seen a letter from a gentleman in Quincy, Florida, dated September, which contains the following paragraph:—"There are now several gentlemen here from the West India Islands, for the purpose of ascertaining the fitness of our lands for the cultivation of Sugar. It is their opinion that if the design of the British Government in relation to the emancipation of the slaves is carried into effect, the planters will be driven away from their estates. These gentlemen think that by managing the cane as they do in the Islands, this will prove a fine sugar country."

Charleston, Tuesday October 1.—*Rail Road accident and fire.*—We are indebted to a gentleman passenger, arrived in town yesterday afternoon, for the following information:

On the 29th ult. about six miles this side of the inclined plain, two Cars containing 14 passengers, from some unkonwn cause, were thrown off the road, and entirely broken to pieces. Among the passengers were several ladies, who escaped with little injury. Mr. C. M. Furman, and Mr. Moise, of this City, were seriously injured. A Mr. Wade, and one child, also received serious injury.

Cars and Cotton burnt.

Yesterday, about 2 o'clock, P. M. one mile above Summerville, on the passage down, fire was seen to issue from the pipe by the passengers, and before timely notice could be given to the Engineer, it had communicated to the Cotton, between 30 and 40 bales of which was consumed, together with the Cars Several of the passengers, in attempting to jump from the Car, were seriously injured.—We learn further, that the Camden and Sumter Mail bags were slightly burnt. The Columbia bag is missing, and is supposed to have been burnt with the Cotton.—[Mercury.]

Wheat imported into America from Europe.—A circular from H. Gates & Co. of Montreal, under date of 4th inst., communicates the fact that 40,000 bushels of wheat had arrived in Montreal direct from Archangel, that one or two more cargoes were expected, and consequently that American wheat and flour were depressed in price.

This is a new and unexpected competition with our agriculturists.

Newbern N. C. Oct. 4.—This week, about *one hundred and fifty* bales of cotton have been sold in our market. Prices are somewhat higher than they were last week. Sales have been brisk at *fourteen cents*, and holders are looking higher.

A new post office has been recently established in the eastern part of the town of Chili, Monroe co., in this state, by the name of *O'Connellville*, and John Davis Walsh appointed post-master. This office is located on the river road, nearly equi-distant from Rochester and Scottsville; and is on a daily mail route.—[Argus.]

Earthquake in Cuba.—By arrivals from Havana, we have received papers of that city to Sept. 20th. A letter of the 23d August from Santiago de Cuba contains the following:—

On the 17th inst. at 19 minutes past 10, P. M. several shocks of an earthquake were felt in this city, more severe than usual. At 9 minutes past 11, others still more severe: and at 11 minutes past 5 on the following morning, two others. On the 20th, about half past 8 P. M. another shock, though slight, was felt, and several persons say they perceived two more. These events could not be regarded with indifference by a community which remembered the horrors of the great earthquakes in 1678 and 1766. It was feared they might be the precursors of some dire calamity.

G. M. Davison, Esq. of Saratoga Springs, has been appointed Commissioner of the Utica and Schenectady rail-road in place of Wm. C. Bouck, Esq. who declined the appointment.

We understand says the Argus, that the Hon. C. C. Cambreleng has tendered his resignation as a director of the U. & S. rail-road company.

The Hon. Elias Horry, President of the Railroad Company, delivered yesterday, before a respectable assemblage of citizens, an address on the occasion of the completion of the railroad. We had not the pleasure of hearing it, but understand that it was marked by extraordinary research and ability, investigating the origin of railroads, and illustrating the advantages to Charleston, and ultimately, by its extension westwardly, to a very large portion of the country. Mr. Horry dwelt with particular emphasis, we learn, on the advantage of the railroad system, when fully matured in the United States, as a bond of union between the states.—[Charleston Patriot.]

[*From Brockedon's Excursion in the Alps.*]

THE MONASTERY OF THE GREAT ST. BERNARD.

The scene around us was nearly closed in by mountains, peaks, and rocks, which descend even to the hospice: upon the latter of these, bordering the lake, lay large patches of snow, from which it is rarely free throughout the year. The spot was wild beyond imagination, and combined features of the sublime and the beautiful, to which we are impatient to add a third—the *social*—which, even in this wilderness in the clouds, we received from the kind and gentlemanly attentions of the monks of St. Bernard.—They were at their duties in the chapel when we entered: but we were welcomed by a fine, respectable looking servant, Victor, who realized the proverb "like master, like man:" he was one of the fittest precursors to their hospitality that I ever saw. In a few minutes he placed refreshment before us, and said that we should be expected at six o'clock to sup with the brethren. The decent, unpretending kindness of this welcome delighted us. We were soon after greeted by some of the monks; and surprized to see them all young men, at least none were forty.—We learnt that they volunteer into this kind and devoted service at eighteen years of age: their vows are for fifteen years to this duty; but few are robust enough to bear the severities of the winter at this height, without feeling their effects in broken constitutions and ruined health.

In the summer of 1816, the ice of the lake never melted, and not a week passed without snow falling: the severest cold recorded was 29 degrees below the zero of Fahrenheit: it has often been observed at 18 and 20 degrees below. The greatest heat has been 68 degrees of Fahrenheit; but even in the height of summer it always freezes early in the morning. The hospice is rarely four months clear of snow: its average depth around the building is seven or eight feet, and sometimes the drifts accumulate to the height of forty feet against the hospice. The entrance, for this reason, is attained by a flight of steps, which lead to what may be called the first floor: below, are the stables, store rooms for wood, &c. This leads to a corridor, and thence into various offices; on the floor above, another corridor leads to the chapel, the refectory, the separate chambers for the religieux, and extensive accommodation for travellers; in which the neatness and comfort of the arrangements add greatly to an Englishman's enjoyment of his reception. One chamber is devoted to visiters, especially the ladies; it may be considered as the *drawing room* of the establishment. To decorate this room, travellers have presented to the hospice prints and drawings, and even a piano forte has been added to the means of enjoyment here. A cabinet is attached to this chamber, which contains collections made by the monks of the plants and minerals around the Great St. Bernard, and antiquities from the ruins of the Temple of Jupiter, which formerly stood on this mountain. These consist of votive tablets and figures in bronze and other metals, arms, and coins; and are a great resource to the visiters at the hospice, if the weather should be unfavorable enough to detain them within its walls.

The perilous passage of these mountains is more frequently undertaken in the winter than is generally imagined; it is difficult to conceive the necessity or urgency of affairs which can lead persons, at such a season, through such scenes of danger. They are generally pedlars or smugglers, who mount the pass from either side, in defiance of the snows, tourmentes, and avalanches of these high regions. During the severe cold of winter the snow at this elevation forms and falls like dust; it congeals so soon, and so hard, that the particles do not attach and form flakes when they touch, as in lower regions; and, instead of consolidating beneath the traveller's feet, they rise around him in powder, and he sinks to his middle. These snow-storms, when accompanied by violent winds, are called tourmentes, and are often fatal to the poor wretches who encounter them; unable then to trace the path they wander and fall over precipices. The avalanches, too, take their share of their victims. The summer avalanche is caused by the submelting of the snow, which undermines its support; and the mass, once set in motion, descends with great violence. The avalanches of winter are occasioned by the masses of snow accumulating on the slopes of the mountains, where it is too dry to attach firmly: and when the weight of snow exceeds the supporting resistance of the surface of the ground, it slides off into the valley below with a suddenness and violence which the monks who described it compared to the discharge of a cannon-ball: these are the sort of avalanches which in the winter render the approach to the hospice very dangerous. Near the convent the mountains are steep, and the traveller is exposed to almost cartain destruction if an avalanche fall whilst he passes; and the poor wretch, buried beneath the mass, is found only when the snow melts, and the summer, which to him never returns, discovers the victim in these regions of winter. Under every circumstance in which it is possible to render assistance the worthy monks of St. Bernard set out upon their regularly appointed duties. Undismayed by the spirit of the storm, and obeying a higher power, they seek, amidst the greatest dangers, the exhausted or overwhelmed traveller,—they are generally accompanied by their dogs. The sagacity of these animals is so extraordinary, that they too, as if conscious of their performing a high duty, will roam alone the day and night through in those desolate regions, discover the victim buried in the snow, and lie on him and lick him to impart warmth. They bear with them some refreshing liqueur around their necks for the poor traveller whom they may find, if he should have still sense enough left to use it; they then bark or howl—their signals for assistance—or, if the distance be too great, return to seek it. These valuable and noble animals have often deserved gold collars from the Humane Society. At present, there are only four of these dogs at the convent. Not long since a mortality prevailed among them, and they had almost become extinct.

The number of resident monks is now twelve:—they all, except the principal, work at the common duties of their establishment; they have five or six resident domestics, besides some at the vacherie, and in several other services of the hospice. The religious order of the monks on the St. Bernard is that of St. Augustin, of which the distinguishing badge is a white narrow band, with an open slit some way along the middle. This is passed over the head, and hangs like a chain from the shoulders; the ends are tucked, before and behind, into a black broad girdle, which is worn round the middle. Their dress is a long cloth tunic, with sleeves which fit close. On the head they wear a pyramid cap with a tuft at the top; the whole dress is gentlemanly and becoming.

At supper we were placed at the head of the table; it was Friday; the soup, though *maigre*, was excellent; the fish—pieces of salt cod, dressed with cream and currants—delicious omelets, cheese, and fruit, completed our repast. The *vin ordinaire* was good, and an extra bottle was served to us of some delicious Italian wine. Their courteous and polite attentions to their guests were those which would indicate more social intercourse with the world than they can have had; and we received this kindness, in regions otherwise inhospitable, from men whose habits might have been monkish and secluded, instead of being the dispensers of such refreshing and unexpected manna as they offered to us in this wilderness. The conversation at table was general and most rational. It had no restraint but in the respect which their characters and conduct commanded.—Their information was more extensive than I had expected to find it upon the state of literature and science in the world they had left. This they derived from the periodical works of some academic bodies which are sent to them; they have a small library, principally composed of theological works. Much of their knowledge is acquired by their intercourse with their visiters, which, during the short summer at the hospice, is extensive; and, among the crowd, many respectable and well-informed travellers furnish them with information. There is a propriety in their inquiries, and an apparent interest in the affairs of mankind in their conversation, which, except that it is entirely free from discontent and affectation, would induce the traveller to imagine that their cells sometimes heard their sighs for a freer intercourse with the world. In reply to some questions which I put to the prior about the state of their funds and the report which had prevailed in England, that the absence of Napoleon from the political world had lessened their resources, he informed me that their finances were now in a flourishing condition, and that Bonaparte rather impoverished than enriched them. It is true that he had assisted them with donations; but his claims upon them for the purveyance of his soldiers had exceeded these benefits—they had had forty men quartered upon them for months together, and 50,000 had passed by the hospice and been assisted in one year. Now, however, the prior said, their resources were increasing: the peace of Europe enabled those strangers to visit the hospice who travelled for pleasure, and could afford to aid their funds. Those who can pay, though no charge is made, usually deposit something in the box in the chapel of the convent, which is rarely less than the parties would have paid at an inn; the poor traveller is always fed and lodged gratis.

After our arrival to-day, not fewer than ten other visiters reached the hospice in three parties. An English young married couple, with two friends, passing the honeymoon in Switzerland and Savoy; an Englishman and his wife, with their children—a son and daughter, about twelve or fourteen years old. These remained in the drawing-room, an apartment particularly appropriated to their visiters, when there were ladies in the party. We did not visit them, as, for once, we preferred the society of the monks. The third party was an intolerable young puppy, an Englishman; he came with his servant, who wore the dress of a courier. This precious specimen of the worst produce of our country, entered the room with vulgar discourtesy, as if he had done the hospice prodigious honor in condescending to come there at all; returned uncivil looks to the proffered kindness of the monks, flung himself into an arm-chair, and, giving to another the honor of supporting his legs, wrapt himself up in his ignorant, or, as he of course thought, dignified silence, until his servant entered to tell him that his room and refreshment were ready, when he ordered a *fire* in his chamber. This almost upset the tranquillity of the kind-hearted principal, who, after the puppy had retired, hinted to us, with more delicacy than the *object* deserved, that the last was the heaviest claim he could make upon their hospitality, as the difficulty of procuring fuel is very great. The whole hospice is warmed by an apparatus which renders particular fires at this season unnecessary in the chambers: it certainly was not needed by the *young* and *healthy* coxcomb who had ordered what *ought to* have been reserved for an invalid, the traveller in winter; or to render more endurable to themselves the severities of the awful situation to which they were generously devoted for the service of others. Not a bush is to be found near the hospice, and the wood for its service is obtained from the forest of Ferret, a distance of nearly four leagues. The consumption of wood is very great; for at the hospice, owing to its great elevation, water boils at a temperature considerably less than on a level with the sea: this is so unfavorable for the concoction of meat, that it requires longer boiling, and, of course, a greater quantity of fuel is consumed.

One of the parties arrived late, between nine and ten o'clock. The night was calm and beautiful, and so warm for this elevation, that we enjoyed looking out of the window upon the still and deep and solemn scene which surrounded us. One of the brethren said, "There is company ascending the mountain on the Swiss side;" but, silent as the grave as every thing was around us, our ears were not susceptible of such nice distinctions of sound: he said that they were very distant. He was right: the party with the children arrived long enough after to astonish us at the perception which he must have had of their approach.

[*From the Churchman.*]

The Opening of the Sixth Seal now exhibiting in Barclay-street, is a painting of which the Christian monitor may speak in terms of unqualified eulogy; no small praise in an age of frivolity and growing licentiousness, when the nobler productions of the art, even with the guarantee of a scriptural subject, are not always of an unquestionable purity, and the panderings to a corrupt taste are every where unblushingly obtruded on the public eye. A visit to the painting sustained the impression of its merit which the high encomiums bestowed on it had previously produced. The conception is sublime, the execution exquisitely fine; nor can any thing, we think, be suggested to heighten the effect, unless it be that the artist might have taken a little more range of canvass, the small size which he has chosen being hardly adequate to express his conception in all its vastness and variety. Several vivid and elaborate descriptions of it have been written, and it would be easy to add another to the number. But what is the use? To those who have not seen the painting no words can convey an idea of its grandeur, and to those who have seen it any description would be tame.

It is more in our province, and, we confess more to our taste, to turn the subject to better account. As the reader gazes on this master-piece of art, and suffers it, for a while, to abstract him from perishable things, to prompt him to secret converse with the deeper sentiments of his soul, and to lift him to holy musings on infinite existence, we would whisper that the scene before him is not merely an exhibition of the sublimity of his faith, but a substantial proof of its verity. Is he not conscious that the deep sentiments which it excites, are one with the soul, partaking of its vitality, and inhering in its essence? Who then but the Creator of the soul could thus have interwoven them with its fabric? Does he not know that, far from being peculiar to him as an individual, they are common to his kind, part of his nature as man? Who then could have implanted them but the Author of nature? Does he not feel that they are unutterable? And must they not then have sprung from the Infinite? Do they not yield spontaneous homage to Truth and Virtue, and rise in indignant reprobation of falsehood and vice? Do they not cause the soul to glow with the hope of pardon, or tremble at the terrors of judgment? And do they not thus proclaim, with authority, a moral Governor and a righteous Judge? And these profound energies, thus universal, ineffable, divine, what can stir them but congenial Truth? What but the rays of Truth can be the medium of communication between the inward light and the grand Fountain of Illumination? What but divine Truth can call forth a response to feelings which echo only to the voice of GOD? What but spiritual Truth can thus coalesce with affinities for the world of spirits? By what means but by the Truth can the GOD around and above thus act on the divinity within? What but the heavenborn Truth can thus prompt the lofty aspiration, illume the holy hope, sharpen the secret sting, infuse the awful dread, and, in a word, overwhelm the soul with that throng of indefinite, because partaking of the infinite, emotions which the conception of the Last Day is sure to excite? This, it may be said, is the poetry of religion. Be it so. But who ever heard of the poetry of Infidelity? To what effort of genius has Infidelity afforded a subject?—What sublime conception has Infidelity ever awakened? What deep chords of feeling can it strike?—What thrilling associations can it inspire? None.—Infidelity is at best a negation. It has never added a thought to the stock of human knowledge, nor a particle to the aggregate of human happiness. Rather it is the genius of Destruction. All things in the moral creation wither at her touch: all beings are petrified at her glance. She makes a solitude, and calls it her empire. She has no creation of her own, but lives on the extinction of light and life, and reigns only in darkness and death. It is the Bible with its story of Creation and Redemption, the Resurrection and the General Judgment, in which the poet and the painter have found those sublime conceptions that provoke the efforts of human genius; those infinite conceptions which afford a boundless scope to imagination, and which, because they are infinite, the finite mind essays in vain, and therefore again and again essays, to grasp and embody. To this field of glory the Infidel, if he have genius, is impelled by the very instinct of genius; and is thus driven, by the necessary laws of his being, ignorantly to worship the Unknown GOD whom the Christian seeks to reveal. True it is the poetry of religion which we feel, but such poetry as we can demonstrate with philosophic precision, to be not more the glory of our faith than the seal of its truth.

And who has furnished the materials for these conceptions? Who has thus given the transcript of heavenly scenes, and perpetuated the record of events in the origin, development and consummation of which Time is lost in Eternity? One who outshone his fellows in the splendor of genius? One who was rich in learned lore? One who had explored the mines of philosophy and appropriated the treasures of history? One at whose fane the poet and the orator came to worship, to whose authority the sage deferred, whose name the people idolized, and whom all strove to distinguish by pompous epithets and magnificent monuments? Far otherwise. It was John the Evangelist: one whose highest praise it was to be the disciple whom Jesus loved: one who in Ethics essayed nothing more sublime than "Little children, love one another!" The princes of this world overlooked him, for he was humble; the learned scorned him for he was simple; the people hated him for they knew him not. He was the victim of the malice of this world, and his star set under a cloud of obloquy. But it has arisen again, and the higher it ascends in the firmament, the more pure and bright the light which it sheds. His works remain; no ponderous tomes, but a few pages; no labored productions, but artless as the expression of an infant's thoughts. And yet they are a pandect of Truth; above reason in wisdom, above nature in sublimity. The statesman who watches the rise and fall of empires, may take him as his guide; the philosopher who meditates on the laws of spirit and the perfections of Deity, bows to his authority; the philanthropist who seeks to purify and elevate society, diffuses his oracles; while the poet and the painter borrow from his exhaustless treasures, and light their fires of genius by living coals taken from his altar. Shame on the credulity which can believe that in the course of secondary causes and without the special interposition of the Most High, the mental homage of civilized and enlightened man could thus be lavished on the illiterate and ungifted Galilean!

Turn aside, then, reader, from what is vain and voluptuous, and elevate thy taste by the contemplation of a scene at once holy and awful. Yield to the spell which transports thee to the isle of Patmos, where the apocalyptic angel is in the act of opening the Sixth Seal. And, as you behold the sun darkened and the moon like blood; the stars falling, and the heavens departing as a scroll; and the kings of the earth hiding themselves in the dens and saying to the mountains and rocks, "Fall on us, and hide us from the wrath of the Lamb!" remember that the feelings which agitate thy bosom are the spontaneous homage which nature yields to Truth, the inward attestation of thy Maker to the purity of his attributes and thine own accountability, and the involuntary recognition of Conscience of those awful realities, a future Judgment and an Omniscient Judge!

POETRY.

FOR THE NEW YORK AMERICAN.]

To a Young Belle who talked of "giving up the World."

The light of that soul, once so brilliant and steady,
So far can the incense of flattery smother,
That at thought of the world of hearts conquered already,
Like Macedon's madman you weep for another?

You give up the world? Why, as well might the Sun
When sated with drinking the dew from the flowers,
While his rays, like young hopes, stealing off one by one,
Die away with the Muezzin's last note from the towers,
Declare that he never would gladden again
With one rosy smile the young Morn in its birth,
But leave weeping Day, with her sorrowful train
Of Hours, to grope o'er a pall-covered earth.

Yet if, having this poor Earth sufficiently tried,
Some home you would choose more endurable than it,
Let us know but the spot where you next would abide,
And that instant for one I am off for that planet. H.

[*From the Token and Atlantic Souvenir for* 1834.]

WHY DON'T HE COME?—BY H. F. GOULD.

The ship has anchor'd in the bay!
They have dropp'd her weary wings, and some
Have mann'd the boats and come away;
But where is he? why don't he come?

Among the throng, with busy feet,
My eye seeks him it cannot find:
While others haste their friends to greet;
Why, why is he so long behind?

Because he bade me dry my cheek,
I dried it, when he went from us,
I smiled with lips that could not speak;
And now, how can he linger thus?

I've felt a brother's parting kiss,
Each moment since he turn'd from me,
To lose it only in the bliss
Of meeting him—where can he be?

I've rear'd the rose he bade me rear—
I've learned the song he bade me learn,
And nursed the bird, that he might hear
Us sing to him, at his return

I've braided many a lovely flower,
His dear, dear picture to inwreathe,
While doating fancy, hour by hour,
Has made it smile, and seen it breathe.

I wonder if the flight of time,
Has made the likeness now, untrue;
And if the sea or foreign clime,
Has touched him with a darker hue.

For I have watch'd until the sun
Has made my longing vision dim,
But cannot catch a glimpse of one
Among the crowd, that looks like him.

How slow the heavy moments waste,
While thus he stays! where, where is he?
My heart leaps forth—haste, brother! haste!
It leaps to meet and welcome thee:

'Thou lovely one! the mournful tale
That tells why he comes not, will make
Thy heart to bleed, thy cheek look pale!
Death finds no tie too strong to break!

'The bird will wait his master long,
And ask his morning gift in vain:
Ye both must now forget the song
Of joy, for sorrow's plaintive strain.

'The face whose shade thy tender hand
Has wreathed with flowers, is changed! but sea,
Nor sun, nor air of foreign land
Has wrought the change, for where is he?

'Where? ah! the solemn deep, that took
His form, as with their sad farewell
His brethren gave the last, last look,
And lower'd him down—that deep must tell!

'But ocean cannot tell the whole—
The part that death can never chill,
Nor floods dissolve—the living soul,
Is happy, bright, and blooming still.

'And nobler songs than e'er can sound
From mortal voices, greet his ear;
Where sweeter, fairer flowers are found
Than all he left to wither here.

'This, this is why he does not come,
Whom thy fond eye has sought so long!
Wait till thy days have fill'd their sum;
Then find him in an angel throng!'

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch, }
200 do. 1¼ do. ½ do. }
40 do. 1½ do. ⅜ do. }
800 do. 2 do. ½ do. }
800 do. 2¼ do ⅝ do. }
soon expected. }
Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them a73meowr

AMERICAN INSTITUTE.

☞ THE Sixth Annual Fair of the American Institute will be held in the city of New-York, at Masonic Hall, on Tuesday the 15th of October next, and continue three days.

Premiums, consisting of Diplomas, or Medals, will be awarded, as usual, for such articles of American production, as shall be adjudged superior either in material or workmanship.

As a new impetus seems to have been lately given to American Industry, it is confidently expected that the Fair announced for October next, will present still more decisive evidence of the advancing condition of our agriculture, our manufactures, and the arts, than any of those which have preceded it.

Such ingenious and useful machinery as may be conveniently transported, and put in operation, will give interest and spirit to the occasion.

Each article should be labelled with the name of the manufacturer, or producer, and with the agent's name, and number, in this city.

The design is to inform buyers where they can supply themselves with the best articles. In this way, by means of former Fairs, many excellent workmen have become better known and have obtained permanent and profitable customers, who, while they have been better served, have at the same time rewarded and stimulated American skill and industry.

Articles entered for premiums must be delivered as early as Monday, the 14th of October.

More particular notices will be published previous to the Fair. For any other information which may be desired, apply to either of the Managers, in person or by letter.

JAMES LYNCH,
ANDREW WILLIAMS,
EDWARD T. BACKHOUSE,
CLARKSON CROLIUS, Jr.
WM. F. PHYFE, } Managers.
JOHN SAMPSON,
JOSEPH TITCOMB,
JARED L. MOORE,
GEORGE BACON,

New-York, July 4th, 1833. A29 tl2 oct R J

WINCHESTER AND POTOMAC RAILROAD.

☞ TO CONTRACTORS FOR EXCAVATION AND MASONRY.—Proposals will be received by the undersigned at Taylor's Hotel, in Winchester, Va. *on the 7th day of November next*, for the Grading and Masonry of *Twenty seven miles* of the Winchester and Potomac Railroad, commencing near the town of Winchester, and ending at the Shenandoah River. The above work will be divided into sections of convenient length; and plots and profiles of the line, and drawings of the requisite constructions, will be exhibited at Winchester, for one week previous to the letting.

Proposals will be received at the same time and place, for delivering, on the line of the Railroad, *Four hundred thousand lineal feet* of Heart Yellow Pine or White Oak Rails, the dimensions of the rails to be five inches wide, by nine inches deep, and in lengths of fifteen and twenty feet.

Any further information in relation to the above work will be given on application, verbally or by letter, to William H. Morell, Principal Assistant Engineer, Winchester, Va. or to the Assistant Engineers on the line.

MONCURE ROBINSON, C. E.

Sept. 27th, 1833. o6 tn7.

☞ **TOWNSEND & DURFEE**, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson under the name of *Durfee, May & Co.* offer to supply Rope of any required length (*without splice*) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F2 tf

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

☞ I have been frequently asked, since the notice in the last number was published, if I really intended to discontinue the Journal at the end of the present number—in reply to which I have uniformly answered: *not if sufficient patronage should be received to pay its expense*; and, in order to do that, I must have sale for 250 copies of the *past* and *present*, and an equal number of subscribers to the *next* volume; and I therefore again put the question, ☞ *Would it not be well for the numerous Railroad Companies to order* 5 *to* 10 *copies, bound, for the use of such of their Engineers as may not already have it?* Would they not probably find it a matter of *economy*, as in the Journal they will find some account, or description, of almost every *improvement* in, or *new suggestion* relative to, Railroads, by which *hundreds*, and perhaps *thousands* of dollars, may be saved in the location and construction of their road? I am willing to superintend its publication without compensation, even for another year, but I cannot longer *afford* to do that and also be in advance to it to the amount of *several hundreds* of dollars.

MARRIAGES.

On Tuesday evening last, by the Rev. Mr. Geissenhainer, Edw'd L. Mathews, to Adelia E., daughter of Benj. Birdsall, Esqr.

On Wednesday evening, by the Rev. C. W. Carpenter, L. D. Sims, of the U. S. Army, to Miss Catharine D. S. Bancker, of this city.

At New Haven, Conn. on Monday morning, October 7, by the Rev. Mr. Merwin, William R. Cone, Esq. of Hartford, to Miss Rebecca D., daughter of James Brewster, Esq. of the former place.

At Norfolk, (Va.) on Sunday the 6th instant, by the Rev. Dr. Ducachet, Lieut. W. Fenn Hopkins, of the Army, to Miss Frances L., daughter of Wright Southgate, Esq. of Norfolk

At Troy, on Monday last, by the Rev. Mr. Butler, Alfred Brooks, Esq., of the house of Brooks, Brothers & Co. of New York, to Miss Lydia Warren, daughter of the late Esais Warren, Esq. of the former place.

DEATHS.

On Thursday afternoon, after a short and painful illness, Mr. Sylvester Phillips, in the 35th year of his age.

In this city, on the 5th of October instant, Sarah H. Dering, daughter of the late Gen. Sylvester Dering, of Shelter Island. Her remains have been taken to Shelter Island for interment.

Wednesday afternoon, in the 16th year of his age, Cornelius Ray Lott, son of Henry Lott.

Wednesday afternoon, 9th inst., of a protracted illness, Julia Mary, eldest daughter of the late Daniel and Mary Scannell, aged 19 years.

Near Port Gibson, Mississippi, on the 28th of August last, Mr. Edward Cronly, of Lullamore, Kings County, Ireland, in the 40th year of his age.

In Sprinfield, on the 18th ult. of billious fever, Gen. Peter W. Spicer, of the city of New-York. He had been appointed to examine the Land Offices in this State, and three weeks since, in the performance of his duties, he arrived in this town, in a bad state of health. His illness increasing, he was removed to the residence of Wm. L. May, Esq. where he received all the attentions which his case required, but all did not avail to preserve his valuable life.

At New Orleans, of the yellow fever, Oscar Wendell, son of John L. Wendell, Esq. of Albany.

At the same place, on 27th Aug. at Bankston's Springs, Hinds county, Mississippi, of liver complaint, the Rev. G. D. Murphy, Pastor of the Presbyterian Church at Amsterdam, Miss.

At Lancaster, Ohio, Mr. John Herman, formerly Editor of the Ohio Eagle.

At Washington City, on Tuesday last, in the 43d year of her age, Mrs. Anne Maria T. Washington, wife of Bushrod C. Washington, Esq. of Jefferson county, Virginia.

SIXTEEN THOUSAND SHARES, AMOUNTING TO $800,000 Stock, in the MADRIVER AND LAKE ERIE RAILROAD COMPANY.—The subscribers will open books of subscription to take up said stock, on Monday, the 14th day of October instant, which shall be kept open three days, from 9 o'clock A. M. until 3 o'clock P. M., at the Exchange, in Wall street, in the city of New York; at the City Hall in the city of Albany; and at the Eagle Tavern in the city of Buffalo.

Five dollars on each share will be required at the time of subscribing; and if more than sixteen thousand shares shall be subscribed, the reduction will be made agreeably to the provisions of the charter, by striking off from the largest number of shares in succession, until the subscription shall be reduced to sixteen thousand shares, as above stated.

JOSEPH VANCE, }
ISAAC MILLS, } Commissioners.

New York, 3d October, 1833. dtO17

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR,
35 Wall street.

New-York, August 14, 1833.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish; at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, corner of Maidenlane.

J31 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other Instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Germant. and Norrist. Railroad

m1 1y

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.

J25 tf

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also. AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry. Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J3 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

MATHEMATICAL & OPTICAL

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 52 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

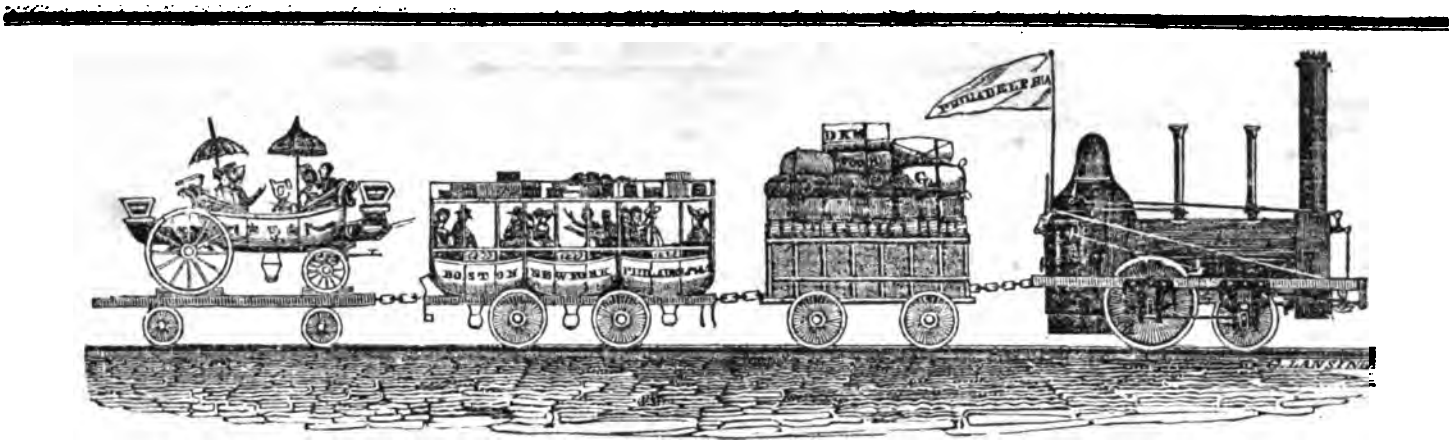
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, OCTOBER 19, 1833. [VOLUME II.—No. 42.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, OCTOBER 19, 1833.

UNDULATING RAILWAYS.—This subject seems to have attracted much attention in England: so much, indeed, that an experiment upon a large scale is about to be made. We therefore shall continue the discussion, from the London Mechanics' Magazine, in the Journal; and we do so with the greater pleasure on account of the very proper temper with which it is carried on.

SOUTH CAROLINA RAILROAD.—We are informed that the Governor and suite, together with the Committee of the Railroad Directors and the Augusta mail, which left town on Thursday morning at a quarter before 6 o'clock, arrived at Aiken, 120 miles, at 5 P. M. The car with the mail and passengers was let down the inclined plane, and arrived at Hamburg at 8 P. M. The distance from the Inclined Plane to Hamburg was performed by hand power. The morning papers of this place were thus received in Augusta on the evening of the same day on which they were issued.

The above is from the Charleston Patriot of the 5th October. It announces, we believe, the first arrival at Hamburg of a train of cars and the mail by the Railroad, and it may be deemed as the commencement of a new era in the history and *prosperity* of South Carolina. It is the longest continuous line of railroad in the world now in use. It is, however, we hope, *only the commencement* of a still longer line, which will ere long extend through Georgia, Alabama, and Tennessee, to the junction of the Ohio and the Mississippi, which will open to those fertile states another and a very important communication with the Atlantic, and one which will neither be obstructed in summer by want of water, nor in winter by fetters of ice.

ROADS IN ENGLAND.—The account (at p. 660) of the great benefits that have accrued to the English nation from their GOOD ROADS, will, we are sure, be perused with interest by every person who is anxious that internal improvements should go on prospering in this country. The great facilities that good roads afford the people of that country, for transporting rapidly their manufactures, as well as the produce of the soil, within the last few years, has had a very salutary effect in lowering the price of provisions, and enabling the merchant and manufacturer to find a ready market for their goods. The husbandman, instead of setting off to the nearest market at midnight, in his ponderous broad-wheeled waggon, travelling at the rate of two and a half miles an hour, can now, with a light caravan, travel at the rate of seven or eight miles. GOOD ROADS have also effected a very efficient reform in the Post Office department: individuals have been induced to enter into contracts, in nearly every county, to carry the mail ten miles, and in several cases twelve miles an hour. A few years since, seven miles was considered very expeditious. As a proof of the excellent state the roads are kept in, we will just mention that, about two years ago, Lord John Russell was invited to a public dinner, sixty miles from London: the dinner was about five o'clock: the speeches occupied the time until ten o'clock, and were taken down by Mr. Wood, one of the short-hand reporters to the "Morning Chronicle," and filled several columns of that paper. He transcribed every line for the compositor *on his way to London in a post-chaise.* The paper was printed in London, and dispatched by the 4 o'clock morning coaches to the very town where the entertainment had been given, and was there in sufficient time for the breakfast tables, at 9 o'clock.

To the Editor of the American Railroad Journal:

SIR,—I have one favor to ask of the readers of the Railroad Journal, through this medium, which is, that they would inquire as to the truth of Mr. Bulkley's assertions in his last reply to me, before they admit any thing there advanced to be true. There is nothing wanting to make the truth or falsehood of these assertions evident, but a reference to our former communications on a subject which is too stale to be again mentioned.

URIAH A. BOYDEN.

As the discussion to which the preceding refers is now closed, we hope to hear from the gentlemen on other subjects.—[ED. R. R. J.]

PETERSBURG RAILROAD.—Transportation on the Petersburg railroad for the week ending October 12: 736 bales of cotton, 13 hogsheads tobacco, 140 boxes do., 600 bushels of wheat, 100 barrels flour, 5500 lbs. seed cotton, 3000 pipe staves, 100 bushels corn, 5 veals, 14 barrels of brandy, 16500 lbs. iron, 1380 packages goods and all other articles, 416 passengers.

The transportation on the railroad would have been more considerable, if the company had received all the locomotives which were ordered several months ago. It is understood that a large quantity of cotton and other produce remains at the various depots, which will arrive this week.—[Petersburg Intelligencer.]

ALEXANDRIA, D. C., Oct. 14.—Whilst we are writing the waters of the Potomac, above Harper's Ferry, are silently flowing into the Chesapeake and Ohio Canal. Passing the long contested Point of Rocks into the long finished part to the Seneca, they will connect the tide water of this district to the fertile region of the Shenandoah and the upper part of Virginia and Maryland, watered by the Potomac and its tributary streams.

This part of the Canal is the most expensive of the Eastern section. The difficulties have been surmounted in a manner which reflects the highest degree of credit on those who directed and those who have executed the work. Early in the ensuing season, more than one hundred miles will be completed, passing Shepherdstown and Williamsport in its route.

The hopes of the people of this district have been raised to the expectation of its continuance to the bituminous coal region above Cumberland, and we hope they will not be disappointed.

In the mean time, however, we have the extreme gratification of feeling an assurance that the supply of coal will not depend on this event. We have before us a favorable specimen of Anthracite Coal, found about five feet below the surface of the ground, near the line of Berkley and Morgan counties, in Virginia, and about fifteen miles from the Potomac. There is every reason to believe that it will be found much [illegible]er to the canal, and that the supply of th[illegible]tity and cle of necessity will be abundant in [illegible] excellent in quality.

Those who are the believ[illegible] in the goddess of good fortune, may [illegible]gratulate us on this lucky hit. As we [illegible]d not arrive at the Coal Banks as soon [illegible] we wished, the Coal Banks have kindly m[illegible] us half way.—[Gazette]

[From the Long Island Star.]

Railroads.—The railroad, the working of which has just commenced between Stonington, Conn., and Providence, R. I., forms an important part of the route between Boston and New-York. The distance of the entire line of railroad, when connected at Providence with the present line, will be about 80 miles. The public generally are not aware that a Long Island railroad of less than one hundred miles, might reduce the time of travelling between Boston and New-York to about 12 hours, thereby obviating the hazard of passing Long Island Sound, and of the lines of steamboats.

It is less than 100 miles from Brooklyn ferry to Greenport, formerly called Sterling, in the town of Southold. Greenport is a fine harbor, situated between Shelter Island and the main island, and has good depth of water—easy of access—never troubled with ice. There is already a considerable village, where two whaling ships are annually fitted out, and many smaller vessels are owned and employed.

It is probable the railroad between Brooklyn and Jamaica will be made next season, embracing 12 miles of the proposed route. The remaining distance to Greenport is over a level country, having many facilities for constructing a cheap railroad. A steamboat could pass between Greenport and Stonington in 2 hours, during the whole year.

We have no doubt that many persons who have occasion to travel between New-York and Boston, would at this time take the route through Long Island, were they aware of the fact that lines of stages pass three times a week between Brooklyn and Sag Harbor, and that three fine packets are passing every day between Sag Harbor and New-London.

(From the Hunterdon Gazette, N. J.)

The North-Western Railroad.—The extension of the Elizabethtown and Somerville Railroad, so as to form one continuous line of railroad from Jersey City, through Elizabethtown, Somerville, Clinton, Belvidere, the Delaware Water Gap, and Stroudsburg, to Pittston, on the Susquehanna, may well be considered one of the most useful public improvements now in contemplation. The fact that it is calculated to open the shortest and best practicable communication from the city of New-York to the anthracite coal regions of Luzerne county, to extensive deposite of bituminous coal and inexhaustible bodies of iron ore, in Bradford and Tioga counties, in Pennsylvania, on and near to the north branch of the Susquehanna, is sufficient to render this improvement highly important; but its importance is greatly enhanced by farther discoveries, recently made, of the mineral wealth of this interesting section of country.

The facts stated in the following extract of a letter from Dr. Smith, a gentleman of high respectability residing in Kingston, Pennsylvania, to H. W. Drinker, Esq. of Luzerne county, may be confidently relied on:

"Agreeably to the promise made to you, I proceeded to make inquiries relative to copper. A mine has been opened by Col. White, on the south-east side of the Mahoopeny creek, seven miles above its mouth or entrance into the Susquehanna river. The vein here appears about one foot in thickness, and is at present exposed for about sixty feet in length along the creek. It is imbedded in a bluff of rocks very much resembling in appearance the common lime-stone. The bluff as now exposed is about fifteen feet in height, and the vein of ore about three feet above the bed of the stream. This strata of rock makes its appearance upon the Susquehanna a little below the mouth of the creek. It is also found extending up the creek for several miles above the vein opened by Col. White. Copper ore has been taken from this strata of rocks at the river, and at several other places along the Mahoopeny creek. In a deep ravine made by a small branch of Bowman's creek, coming into the stream from the north-west, distant about five miles nearly east from Col. White's mine, the same strata of rocks and vein of copper ore has been discovered. This is the only place on the waters of Bowman's creek, so far as I know, where discovery of copper ore has been made. The copper taken from any part of this vein is of the purest kind. My informant states that he has smelted the ore in a crucible, and afterwards hammered the button found at the bottom, as thin as the paper on which I am now writing, without its cracking, and without any further refining. From these facts it cannot be doubted that there is an inexhaustible quantity of copper in the mountain between the Mahoopeny and Bowman's creek, and that very extensive operations will shortly be carried on in mining and smelting the ore, &c."

W. Henry, Esq. of Oxford Furnace, through whose politeness the above extract was received, very justly remarks:

"This extensive body of one of the most useful metals, being discovered *in the immediate vicinity* of extensive deposits of bituminous coal, renders it the more important and certain for profitable investments, and must necessarily have a considerable influence on the trade and prospects of the great leading highways now about being opened down the Susquehanna river, and into the anthracite coal deposits on the Lackawanna, from whence diverge several chartered and proposed roads; one of which, (the Susquehanna and Delaware Railroad,) being on the nearest and best route to the great commercial emporium, New-York, must be greatly benefitted."

Situated as are these mines of wealth, so convenient to come at, so abundantly supplied with the best of fuel in their neighborhood, convenient to extensive and fertile agricultural districts, and on a railroad, when it shall be completed, leading directly to the best mart in the Union, nothing apparently can prevent their early occupation to a great extent, by an industrious and thriving population. We are warranted in this belief as we know that many of the copper mines of England and Ireland, from whence America is chiefly supplied, are now worked at a very great depth, and, of course, at a very heavy expense. And moreover, several of the most important in Ireland are supplied with fuel from England, transported over land a very considerable distance; yet even *they* are considered a source of great wealth.

On Railroads. By J. Hawley. [From Goodsell's Genesee Farmer.]

Mr. Naman Goodsell: Dear Sir,—I was well entertained with the communication of Mr. John Hartman's, which you copied into your Genesee Farmer, [from the Railroad Journal,] on the very simple and economical construction of railroads, *entirely with timber*, even with wooden rails only, dispensing altogether with the more costly materials of iron and stone.

Elisha Johnson, Esq. (who has shown himself a very practical *matter-of-fact man*, in the building of the Rochester Railroad, and more especially in the construction of the *towing path* along the eastern bank of the Genesee, from the foot of that railroad onward to the mouth of the river, as well as generally in the various improvements contributing to the growth of Rochester,) lately communicated to the Commissioners of the Tonawanda Railroad his opinion of the unnecessary expense of sinking the foundations of the road into the earth, below the reach of frost, as derived from his experience on the Rochester Railroad; that after grading the road to the desired level, then to lay the framing timbers on the surface, without any expensive precautions against frost, merely omitting to use the road during the few days the frost is coming out of the ground in the spring; and giving the road time to settle back to its bed again, and a few dollars would repair the damages incurred.

That one thousand dollars would grade a mile of road, where the excavations did not require more than an average of three feet of embankment; that two thousand dollars would import the iron rails, and lay them down on wooden sills, on the surface, for a mile; making a mile of railroad to cost only three thousand dollars on fair lying and even ground; and allowing two thousand dollars a mile for extra deep cutting and embankments, and bridging small streams, would give an average of five thousand dollars per mile, for an ordinary good route, with a single track.

Both the Liverpool and Manchester, and the Albany and Schenectady Railroads, are said to have cost over fifty thousand dollars per mile. Mr. Johnson's manner of *simplifying* the expenses by omitting to guard against the frost of winter, reduces the cost of a railroad from tens of thousands to units of thousands; and Mr. Hartman's extension of Mr. Johnson's economy reduces it from thousands to hundreds, for the use of common waggons.

These Yankee improvement, on the English system in the construction of railroads portends a great revolution in the facilities of land transportation, and a vast acquisition to the internal commerce of our country; and their cheapness and simplicity will render them too frequent and common among us to let in those monopolies which have grown up under their excessive costs in England; and even already in the United States where they have been partially introduced. And these, with a double track, could be made to be used by common farmers' waggons, like turnpikes.

Mr. Hartman recommends "*good locust, cedar, or oak, for the cross sills and rails of the road, and to char or burn them, instead of taking off the bark.*"

It is known among our carpenters and joiners that *red beech* is even a more durable kind of timber than oak, for ground sills or sleepers lying on or near the ground, in buildings, and is, therefore, worth an experiment, for the cross sills of a railroad. If the common red beech timber of our country could be so made to answer the purpose of *locust, cedar, and oak*, for making railroads, it would be the means of bringing into value a very common and abundant article of our forest, which at present is worth but little more than for fire-wood and potash, and it would be the means of using up an article of home production, and saving the importation of iron railing from England, with the *duties off*. And for the rails of the road, it would probably endure and wear as smooth under the friction of the carriage wheels as any other kind of timber, and would make all, the sills, rails, and grooves of red beech.

Mr. Hartman, (or the printer for him,) has made some mistake in estimating the expense of a "double track, from 8 to $120* a mile." If we allow the cross sills to be eight feet long, and laid eight feet apart, their lineal measure would be 5280 feet, the same length as a mile; then allow the rails to be made of round sticks, sawed through the middle lengthwise, they would make 5280 feet more, which, with the wastage, would require 12,000 feet of timber, running measure, which, at the value of one cent the foot, standing in the forest, would cost the $120. Then to saw the rails, (if it should not be found that hewing and squaring them would be cheaper,) as saw mills could not be had conveniently, they would have to be sawed by hand in a moveable saw pit, or portable saw horse, for raising the logs at $2.50 the 100 feet, running measure; which would cost $130 a mile, allowing the two halves of the log to make the pair of rails for a single track. The 3 by 3 inch scantling, for forming the grooves of the rail, would be equal to 8000 feet of board measure, at $6.25 is $50. Then the cutting, drawing, preparing, laying, and fastening the timbers in their places, and filling up the spaces C C C C with earth between the timbers, would cost, say $200, making $500 a mile for the railing of a single track, after the road was graded, and of the cheapest kind of timber found in our forests.

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* The error is of the printer—it should be 8 to $1200 per mile. See Railroad Journal, of 29th July, 1833, p. 450.

The question for experience to determine is, whether the interest on the capital that *iron rails* cost will build *wooden rails* and keep them in constant repair.

J. Hawley.

Note by the Editor.—As the communication above refers to the use of beech timber for constructing railroads, a short description of this forest tree may be acceptable at this time.

The beech belongs to the twenty-first class and seventh order of L. Monoecia, Pollyandria, genus Fagus.

This species is divided by most botanists into two species, *Sylvatica* and *Ferraginea.* The one is put down in Loudon as the common beech of Europe, the other as the American.

Brown, in his Sylva Americana, has made the same specific difference, under the same names.

Loudon says the "*Fagus ferrnginea* is distinguished by the Americans from the common kind by the name of red beech, the wood being of a darker color."

Brown observes, "the flowers are similar to those of the white beech, though smaller, and put forth in May."

As Loudon has given but one species of European beach, we are led to conclude that we have but one in America, and that is the same as the *Sylvatica* of Europe. So far as we have observed, the color of the wood depends much upon the age and growth of the tree. In selecting the timber from the forest, we have never found any particular characteristic that was sufficient to point out trees of red beech. We have never found young thrifty trees growing in open ground having much red wood in the centre, but, on the contrary, have found those trees which we call red beech in thick forests, where the trees were old, and often dead at the top, giving evidence that they had passed their prime. Upon examining trees where they were cut, we have found that the white wood which surrounded the red was not of uniform thickness, neither does it always contain the same number of grains. The greatest thickness of white wood will be found upon that side of the tree which is in the most growing condition, and from which the most vigorous roots extend.

From these observations, we have been led to conclude that the red color of the inner part of many beech trees was owing to the stagnation of the sap, which, for the want of circulation, had undergone an active fermentation, and that the acid so produced had caused the color of the wood. Red beech, when submitted to destructive distillation, gives off a large quantity of vinegar, or pyralyneous acid.

The particular operation which the active fermentation has upon different kinds of timber is not sufficiently understood to enable us to give it a minute description, but the fact is well known, that a portion of a tree which has become red is more durable than that which remains white, and indicates a free circulation of sap.

For durability we would recommend the following kinds of timber, as suitable for the construction of the Tonawanda Railroad, and which may all be procured either on the line or in the immediate vicinity.

1st. Red Cedar, *Juniperus virginiana L.* This can be procured from the islands in Lake Ontario. It is the most durable of any timber in this section of country.

2d. Yellow Locust, *Robina pseudo acacia L.* This timber is considered as nearly equal to the first in durability, and far superior in strength, but cannot be procured in sufficient quantity, at this time, for the main timber for a road. It would be valuable for pins when they were required.

3d. White Cedar, of the northern States, or American Arbor Nita, *Thnja occidentalies L.* This is a soft but durable timber, and may be found in most of the swamps on the line of this road. Perhaps this is better calculated for the under work of a railroad than any other timber in this vicinity, as a stick twelve inches in diameter would in all probability endure half a century.

4th. White and Swamp Oak, *Quercus, alba and prinus.* Both these varieties of the oak are to be found upon this line of the road, and are more durable than the other varieties. All things considered, these are the most valuable trees of our country. In addition to those, Chesnut, White and Yellow Pine, Larch, or Tamarack, may be advantageously used, and where Chesnut, of what is generally termed second growth, can be obtained, it will be found as durable, or more so, than White Oak.

List of New Patents granted between the 22d of March and the 22d of April, 1833. [From the London Mechanics' Magazine.]

Joshua Horton, of Taylor's Dock, Birmingham, boiler manufacturer, for an improvement in the manufacture of wrought iron chains, applicable to various purposes. To enrol within six months from the 23d of March.

John Joyce, of South-row, New-road, St. Pancras, gentleman, for improvements in machinery for making nails communicated to him by a foreigner. Six months; March 28th.

John White, of Southampton, engineer, and iron founder, for certain improvements in machinery to be worked by steam or other power, applicable to raising water, and to other purposes. Six months; March 28.

Charles Terry, of Shoe-lane, London, merchant, for improvements in producing leather from hides and skins. Six months; March 28.

John Obadiah Newell Rutter, of Lymington, county of Southampton, wine merchant, for an improved process for generating heat, applicable to the heating of boilers and retorts, and to other purposes for which heat is required. Six months; March 30.

William Shilton, of Birmingham, machinist, for an improved apparatus, or machine, for cutting files and rasps. Six months; April 3.

Edward Boys, jr. of Rochester, gentleman, for a machine or apparatus for preventing accidents with carriages in descending hills, or in other perilous situations. Six months; April 4.

George Rogers, of Sheffield, merchant, and John Tatam, of Hilton, county of Derby, gardener, for an improved button. Six months, April 4.

Joseph Gibbs, of the Kent-road, Surrey, engineer, for improvements in the means, apparatus, and machinery, for exhibiting scenery, paintings, or certain descriptions of pictures. Six months; April 4.

John Ericsson, of Albany-street, Regent's-park, civil engineer, for an engine for producing motive power, whereby a greater quantity of power is obtained from a given quantity of fuel than heretofore. Six months; April 4.

Claude Marie Hilaire Molinard, of Bury-street, St. Mary Axe, London, merchant, for certain improvements in looms or machinery for weaving fabrics, being a communication from a foreigner. Six months; April 9.

George Washington Wildes, of Coleman-street, London, merchant, for certain improvements in machinery for cutting marble and other stones, and cutting or forming mouldings in grooves thereon. Six months; April 15.

James Smith, jr. and Francis Smith, both of Radford, near Nottingham, mechanics, for certain improvements in certain machinery for manufacturing lace, commonly called bobbin-net lace. Six months; April 15th.

Mr. Hancock's Steam Omnibus. [From the London Mechanic's Magazine.]

Sir,—More than six years have elapsed since I began my experiments on steam locomotion; and I have followed it with an ardor that did not admit of any diversion from the grand object which I kept steadily in view. During the past week I have exhibited daily on the Paddington road a steam omnibus, the result of my experience; and having hitherto carefully steered clear both of extravagant anticipations and exaggerated statements, I should be sorry if any such should find their way into the public prints. In order to prevent this, as far as I am able, I beg to hand you for insertion in your wide spreading miscellany, the following results of the first six days:

April 22—Started from Cottage lane, City road, to Paddington, and from Paddington to London wall, and back to Cottage lane—9½ to 10 miles—1 hour 8 minutes. Delays, 18 minutes—travelling, 50 minutes.

April 23—From Cottage lane to Paddington, and back to Cottage lane—8½ miles—1 hour 11 minutes. Delays, 9 minutes—travelling, 62 minutes.

April 24—Same ground—1 hour 4 minutes. Delays, 11½ minutes—travelling, 53 minutes.

April 25—Same ground, and back as far as St. James' Chapel—piston broke.

April 26—Same ground, and back to Cottage lane—49 minutes. Delays, 5 minutes—travelling, 44 minutes.

April 27—Same ground—50 minutes. Delays, 5½ minutes—travelling, 44½ minutes.

Average quantity of coke, 1 sack to each trip.

It is not intended to run this carriage more than about a week longer; partly because it was only intended as a demonstration of its efficiency, and partly because my own occupations will not admit of my personal attention to the steering, which I have hitherto performed myself, having no other person at present to whose guidance I could with propriety entrust it. During the time that it will require to build two more carriages for the Paddington Company, I shall have one or two others of my own running, which will afford me an opportunity for training steersmen, &c., for this road, which, of all others I am acquainted with, requires the greatest steadiness and attention.

I am, sir, your obedient servant,
W. Hancock.

Stratford, May 1, 1833.

N. B.—I would just observe, that your correspondent "Candidus" has, I think, stated the number of journeys rather too high. From the manner, also, of wording his letter, it would almost seem to imply that the "Enterprize' was built in the City road, and that other carriages were in progress of building there; but I have no establishment in London, and the "Enterprize' was built at my own place at Stratford, and had its first trials on that road. I took it to town merely to avail myself of the assistance of London artists in its decoration, &c., after which, and before its delivery, I ran it over its intended road, &c., as stated by "Candidus." Thus much for steering clear of all mistakes.

The Great North Road in England. [From the Monthly Supplement of the Penny Magazine.]

Our island, it is true, still "stands where it did" a century ago; but in almost all other respects it is as much changed since then as an old house that had been almost wholly rebuilt. All our accommodations within "this little world" are metamorphosed since the days of our fathers and grandfathers. Turn to which side we may, where shall we find things in any thing like the same state in which they were even sixty years since? All commodities consumed, it may almost be said without exception by all classes of the people, are of improved manufacture and better quality. Look to the clothing that is now worn by men and women, even of the poorest order of our population; nearly every article of it is of a quality such as formerly was not generally used, even by the most opulent. The same thing is true of their food. Throughout England, at least, inferior substitutes for bread made of wheaten flour are now nearly every where discarded: the people will live upon nothing, or at least will take nothing for the main basis of their subsistence, except that best and costliest of all the generally cultivated productions of the earth. Other articles of consumption, again, such as tea, for example, and sugar, have, from being the luxuries of the few, become almost universal necessaries. The houses inhabited by persons of every degree are equally changed and improved. So is every article of furniture, every thing intended either for use or ornament, which they contain. It would be an endless task to attempt to enumerate the many things which but a generation ago were rare, and are now possessed, in greater or small measure, almost by every body; the many other things that were then hardly ever seen, and are now common and plentiful everywhere; and the many others still that absolutely did not exist then, and are now enjoyed either by the whole community or by a large portion of it.

But that which lies at the root and beginning of all these things, and is indeed the foundation of a country's civilization, is a system of good roads. Without this the national resources and energies remain, in nearly their sum total, unawakened and useless. Roads are the veins and arteries by means of which the circulation of the social body is carried on. Where they do not exist, there can hardly be said to be a community. The people have nothing in common. They are not one people in any thing but the name. No commerce, nor intercourse of any kind, mixes them up together into one mass. The inhabitants of a country entirely without roads would, of necessity, be savages.

No country on the face of the earth is so well provided with roads as our own; and that is one of the chief of the causes which places this country, beyond all rational dispute, at the head of the civilization of the world. The greater part of England is now intersected in all directions, not only by paths by which persons may pass on foot from one place to another, but by broad highways for the movement of wheel carriages, and the transference of the heaviest loads that can be dragged by the power of horse or of machinery. Formerly vehicles drawn along the public roads were not allowed to carry above a very small weight. In 1629, Charles I. issued a proclamation commanding that no common carrier, or other person whatsoever, should travel with any wain, cart, or carriage, with more than two wheels, nor with a load of above twenty hundred weight, for fear of injuring the roads; and penalties continued to be exacted under this regulation for many years after. Our present roads, as compared with those which then existed, are not more multiplied than they are improved in quality. Of their number and extent, the latest complete account which has appeared is that given in the appendix to the report of a Select Committee of the House of Commons, which sat on the subject of turnpike roads and highways in 1820. From this document it appears that the length of all the paved streets and turnpikes in England and Wales was then 17,725 miles, and that of other public highways 95,104 miles, making the total length of travelling road 114,829 miles. Assuming all the turnpike roads to be of the statutable breadth of 60 feet, and the others on an average 30 feet broad, the space covered by the whole would be not less than 482,000 acres, or about 752 square miles. In the years 1812, 1813, and 1814. (the latest for which there are any returns,) this extent of road was kept in repair at an annual expense of £1,404,842, being at the rate of £12 6s. 8d. per mile. But notwithstanding all that has already been done in this way, the business of opening additional lines of road is constantly going forward. Some idea of the rate at which this species of improvement proceeds may be gathered from the fact, that in the six years from 1827 to 1832 inclusive, the number of acts of parliament which were passed for the formation of new, and the repair or alteration of old roads amounted to 388, or nearly 65 on an average per annum.

If the whole surface streaked and cut into by these roads, and our other channels of communication, could be taken in by the eye at once what an extraordinary display of national enterprize and national wealth it would present! So large an accumulation of the conquests of energy and the constituent elements of riches, it may be safely said, was never before collected within the same compass. These roads are often the noblest exemplifications of art subjugating and triumphing over the opposition of natural difficulties. Many of them are carried through the air over considerable rivers by bridges of more or less cost and magnificence. Others are supported across depths and hollows on stupendous embankments. Some are driven under ground through mountains. Some terminate in piers that extend far into the sea. There is no hostile force that their daring engineers have not faced and vanquished. And then to our common highways are to be added our railroads, and canals, and rivers made navigable, or otherwise improved by art, as all entering into the aggregate of those channels of communication which our ancestors and ourselves have created, and which contribute in so eminent a degree to make England what it is.

The advantages, however, which we thus enjoy are, in by far the greater part, only of comparatively recent acquisition. The Baron Dupin, in the introduction to his work on the "Commercial Power of Great Britain," writing in 1822, remarks, that fifty years before that time France was generally as far ahead of this country in all that concerns public utility, as we had since got before his own countrymen. Imperfectly supplied with roads as France now is, compared with England, the Baron's statement is probably true, if confined even to this particular. If we turn back at least to times somewhat, though not very much, more remote, we find that there were hardly any roads on which travelling could be conveniently performed, except in the immediate vicinity of the capital, and not even always there. In the appendix to the "Results of Machinery," a passage is quoted from an historical work, according to which it appears that Prince George of Denmark, having in December, 1703, to make the journey from Windsor to Petworth, was 14 hours in accomplishing that distance of forty miles in his coach, the last nine miles having taken six hours to get over them. "We did not get out of the coaches," says the narrator, one of the Prince's attendants, ("save only when we were overturned, or stuck fast, in the mire,) till we arrived at our journey's end. . . . We were thrown but once, indeed, in going, but our coach, which was the leading one, and his highness's body coach, would have suffered very much, if the nimble boors of Sussex had not frequently poised it or supported it with their shoulders." In those days, indeed, and long after, the common mode of travelling was on horseback; and in country parts goods were almost universally conveyed on pack-horses. We gave, in our 61st number, a relation extracted from Dr. Cleland's "Statistical Account of Glasgow," of a journey made in this manner by two inhabitants of that city to London, in the year 1739, in which it is stated that they found no turnpike road until they came to Grantham, in Lincolnshire, 110 miles from the English metropolis. Up to that point they had to make their way along a narrow path, raised in the middle of an unmade soft road, into which latter they had to descend whenever they met one of the gangs of pack-horses carrying goods, the raised causeway not being broad enough to allow the two parties to pass each other. "We, who in this age are accustomed to roll along our hard and even roads at the rate of eight or nine miles an hour," says a writer in the Quarterly Review, (xxxi. 353,) with much truth, "can hardly imagine the inconveniences which beset our great grandfathers when they had to undertake a journey—forcing their way through deep miry lanes; fording swollen rivers; obliged to halt for days together, when the 'waters were out;' and then crawling along at a pace of two or three miles an hour, in constant fear of being set in some deep quagmire, of being overturned, breaking down, or swept away by a sudden inundation."

The Romans formed several excellent roads in Britain, as they did in every other country which they subjected to their arms: but the ages of confusion and misery that followed their departure from the island obliterated these, with nearly every other vestige of their domination. For a long period, instead of our roads being improved, they probably continued to grow worse and worse. About the time of the Norman Conquest, the principal streets of London appear to have been little better than ditches or marshes. It is related that in the year 1090, on occasion of a storm of wind blowing down the roof of St. Mary-le-Bow church, in Cheapside, four of the rafters, each twenty-six feet long, were pitched so deep into the street that scarcely four feet of them remained above ground. Holborn* was not paved till the beginning of the fifteenth century. In the year 1417, the king, Henry V, ordered two vessels, each of twenty tons burden, to be employed at his expense in bringing stones for this purpose, by reason that the highway in question was so deep and miry, that many perils and hazards were thereby occasioned, both to the king's carriages passing that way, and to those of his subjects. The western end of Holborn, however, appears not to have been paved till 1541, in which year both it, Gray's Inn lane, Chancery lane, and other streets now in the heart of the city, are described as very foul and full of pits and sloughs, very perilous and noisome, as well for the king's subjects on horseback as on foot, and with carriages."

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* A long street in the centre of the metropolis.

[*To be continued.*]

Dansville and Rochester Railroad.—At a meeting of the stockholders of the Dansville and Rochester Railroad, at Caledonia, on the 3d instant, the following gentlemen were chosen Directors, viz:

Jonathan Childs, Frederick Whittlesey, Simon P. Allcott, Ebenezer S. Beach, Thomas Kempshall, Silas O. Smith, A. M. Schermerhorn, Jacob Gould, Frederick Bushnell, of Rochester; John R. Murry, of Mount Morris; William Lyman, of Moscow; Charles H. Carroll, of Groveland; Samuel W. Smith, of Dansville.

The Directors then proceeded to Rochester, and the board was organized by choosing Charles H. Carroll, President, Silas O. Smith, Vice-President, A. M. Schermerhorn, Treasurer, and Frederick Whittlesey, Secretary.

Measures, we understand, are to be adopted at the next meeting of the Directors, which will take place in a few days, for the prosecution of the work as soon as practicable. Whether the survey of the route and location of the road will be made this fall remains to be decided on. Should the directors deem it to the interest of the company it will be done, otherwise it will be deferred till the opening of spring.

We learn that the utmost harmony and good feeling prevailed during the meeting of the stockholders, as also at the subsequent meeting of the directors, and that all expressed a conviction of the importance of commencing the work at the earliest period practicable.—[Dansville Chronicle.]

McADAM ROADS.

To the Editor of the New York American:

Sir: Your prompt insertion of my first communication upon the subject of *McAdam Roads* or *Streets*, induces me to trouble you again. I will not, however put forth, or occupy the space in your valuable paper with, speculations of my own; as I am aware, that, in order to have much influence with those who have the management of such matters, theory must be well supported by practical experience. I may however, perhaps, be permitted to bring forward the views of able and experienced road makers, and then show by comparison, that the "experiment" now being made in this city, is *any* thing but *McAdamized*—or, in other words, it is not after the plan of Jno. Loudon McAdam.

The grand secret, Sir, in making road, consists in constructing it in such a manner as to keep the *road bed dry*, or, if it becomes wet, so that it shall not *remain* wet; and in order to do this, the covering must be made to turn the water off on the surface; but, as this is a rather difficult matter, the bed should be so formed, if the water should pass through the covering, to turn it off from that part of the road on which carriages pass, into the ditches at the sides, where it is conducted away from the road, and *not* to make a ditch of the *road bed* to receive and *retain* the water, to destroy the foundation of the road where all the weight of travel passes.

Is it hardly necessary for me to tell you, Sir, that the natural soil, if it could be kept *perfectly dry*, would, of itself, form the very best road that could be made; yet it may not be amiss to observe to those who are not so well informed upon the subject, that, if a road were made of earth, except in a sandy soil—by being raised a few inches in the centre and covered with a shingled roof so as to prevent water from falling or running upon or near it—a covering of stone would be *entirely* unnecessary.

The *natural* soil, in a *dry state*, is ample to carry any load that is ordinarily put on wheels; and the only object of covering the natural soil is to keep it *dry*. Hence the importance of carrying off from, instead of *retaining* the water *in* the road bed. You will therefore see the great error committed by those who have the management of the "experiment" in Broadway, by digging a *trench* in which to put the broken stone, of which they propose to form the covering, which serves also as a reservoir for rain water in no small quantities. It could not have been less than *ten* or *twelve* inches deep on Tuesday last at 10 o'clock after the shower was over. Can you tell me, Sir, what becomes of that water? Is it conducted off by a secret or private passage? or does it find its way *into the earth* under the broken stone? If, as I suppose, the latter, what condition must that *road-bed* be in for sustaining heavy loaded carts and carriages? It must settle into the earth, and of course keep it wet and soft a long time after the surface shows no appearance of moisture. Will not the inevitable consequence be a continual settling and breaking up of the covering? It cannot be otherwise; and I am sure that the system is to be brought into disrepute by those who have undertaken to adopt it, without sufficient information. But I beg pardon; I have already far exceeded my limits, although I have not yet made a single extract from the document to which I referred in my last:

[*Extracts from McAdam's Report to the Board of Agriculture of Great Britain.*]

"During the late winter, and particularly in the month of January, 1820, when the frost was succeeded by a sudden thaw, accompanied by the melting of snow, the roads of the kingdom broke up in a very alarming manner, and to an extent that created great loss and inconvenience by the interruption of communication, and the delay of the mails, and also occasioned a very heavy extra expenditure by the Post Office.

The obvious cause of this defect of the roads, was the admission of water from the loose and unskilful method of their construction. Previous to the severe frost, the roads were filled with water, which had penetrated through the ill prepared and unskilfully laid materials: this caused an immediate expansion of the whole mass during the frost, and upon a sudden thaw, the road became quite loose, and the wheels of carriages penetrated to the original soil, which was also saturated with water, from the open state of the road. By this means, many roads became altogether impassable, while the whole were rendered deep and inconvenient to be travelled upon. * * *

Of all the roads which have been thoroughly remade, according to the directions which I had the honor to submit to your honorable board last spring, not one has given way, nor has any delay taken place through the severity of the late season.

As every winter has, in some degree, presented such inconveniences, and as it has been observed that very severe winters occur in England every six or seven years, it is of great consequence to consider of the means of constructing the roads of the Kingdom in such a manner as shall prevent their being, in future, affected by any change of weather or season.

And roads can never be rendered thus perfectly secure, until the following principles be fully understood, admitted, and acted upon: namely, that it is the native soil which really supports the weight of traffic; that while it is preserved in a dry state, it will carry any weight without sinking, and that it does in fact carry the road and the carriages also; that this native soil must previously be made quite dry, and a covering impenetrable to rain must then be placed over it, to preserve it in that dry state; that the thickness of a road should only be regulated by the quantity of material necessary to form such impervious covering, and never by any reference to its *own* power of carrying weight.

The erroneous opinion so long acted upon, and so tenaciously adhered to, that by placing a large quantity of stone under the roads, a remedy will be found for the sinking into wet clay, or other soft soils, or in other words, that a road may be made sufficiently strong, *artificially*, to carry heavy carriages, though the sub-soil be in a wet state, and by such means to avert the inconveniences of the natural soil receiving water from rain, or other causes, has produced most of the defects of the roads of Gt. Britain.

At one time I had formed the opinion that this practice was only a useless expense, but experience has convinced me that it is likewise positively injurious.

It *is well known to every skilful and observant road maker, that if strata of stone of various sizes be placed as a road, the largest stones will constantly work up by the shaking and pressure of the traffic, and that the only mode of keeping the stones of a road from motion, is to use materials of a uniform size from the bottom.* In roads made upon large stones as a foundation, the perpetual motion, or *change of the position of the materials, keeps open many apertures through which the water passes.*

It has also been found, that roads placed upon a hard bottom wear away more quickly than those which are placed upon a soft soil. This has been apparent upon roads where motives of economy, or other causes, have prevented the roads being lifted to the bottom at once; the wear has always been found to diminish, as soon as it was possible to remove the hard foundation. It is a known fact that a road lasts much longer over a morass than when made over rock. The evidence produced before the Committee of the House of Commons showed the comparison on the road between Bristol and Bridgwater to be as five to seven in favor of the wearing on the morass, where the road is laid on the naked surface of the soil, against a part of the same road made over rocky ground.

The practice common in England, and universal in Scotland, on the formation of a new road, is to dig a trench below the surface of the ground adjoining, and in this trench to deposite a quantity of large stones; after this a second quantity of stone, broken smaller, generally to about seven or eight pounds weight; these previous beds of stone are called the bottoming of the road, and are of various thickness, according to the caprice of the maker, and generally in proportion to the sum of money placed at his disposal. On some new roads made in Scotland, in the summer of 1819, the thickness exceeded three feet.

That which is properly called the road is then placed on the bottoming, by putting large quantities of broken stone or gravel, generally a foot or eighteen inches thick, at once upon it.

Were the materials of which the road itself is composed properly selected, prepared, and laid, some of the inconveniences of this system might be avoided; but in the careless way in which this service is generally performed, the road is as open as a sieve to receive water; which penetrates through the whole mass, is received and retained in the trench, whence the *road is liable to give way in all changes of weather.*

A road formed on such principles has never effectually answered the purpose which the road maker should constantly have in view, *namely, to make a secure, level flooring, over which carriages may pass with safety, and equal expedition, at all seasons of the year.*

If it be admitted, as I beleive it is now very generally, that in this kingdom an artficial road is only required to obviate the inconvenience of a very unsettled climate: and that water, with alternate frost and thaw, are the evils to be guarded against, it must be obvious *that nothing can be more erroneous than providing a reservoir for water under the road, and giving facility to the water to pass through the roadinto this trench, where it is acted upon by frost to the destruction of the road.*

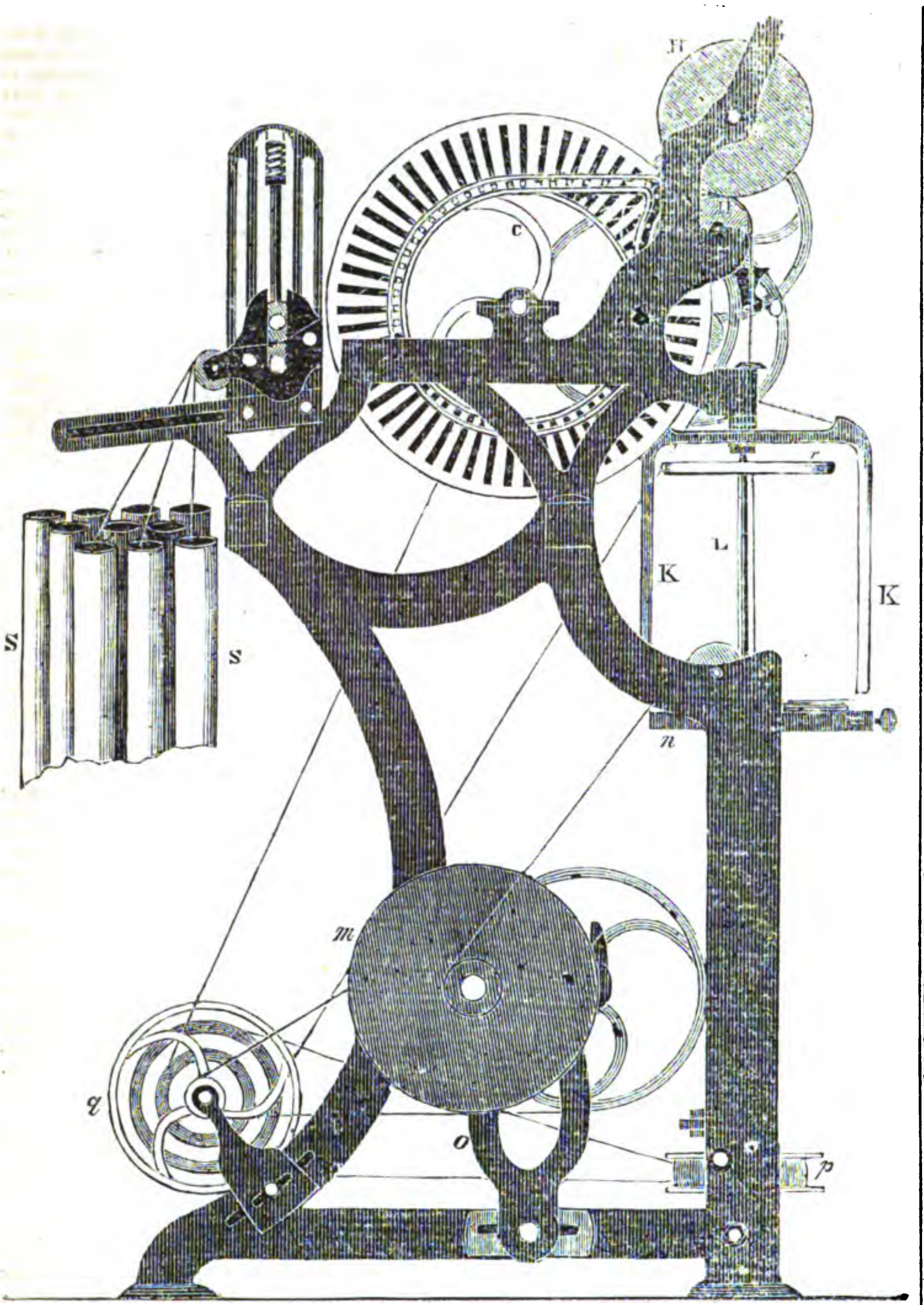
As no artificial road can ever be made so good and so useful, as the natural soil in a *dry state*, it is only necessary to procure and preserve this dry state of so much ground as is intended to be occupied by a road.

The first operation in making a road should be the reverse of digging a trench. The road should *not be sunk below*, but *rather raised above*, the ordinary level of the adjacent ground; care should at any rate be taken, that there be a sufficient fall to take off the water, so that it should always be *some inches below the level of the ground upon which the road is intended to be placed;* this must be done, either by making drains to lower grounds, or if that be not practicable, from the nature of the country, then the soil upon which the road is proposed to be laid, must be raised by addition, so as to be some inches above the level of the water.

Having secured the soil from *under* water, the road maker is next to secure it from rain water, by a solid road, made of *clean, dry stone, or flint, so selected, prepared, and laid, as to be perfectly impervious to water: and this cannot be effected, unless the greatest care be taken, that no earth, clay, chalk, or other matter, that hold or conduct water, be mixed with the broken stone;* which must be so prepared and laid, as to unite by its own angles into a firm, compact, impenetrable body.

The thickness of such road is immaterial, as to its *strength for carrying weight; this* object is *already* obtained, by providing *a dry surface, over which the road is to be placed as a covering, or roof, to preserve it in that state:* experience having shown, that if water passes through a road, and fills the soil, the road, *whatever may be its thickness*, loses its support, and goes to pieces.

The preceding extracts will, I trust, satify those who do me the favor to read them, that *whatever* may be the result of the "experiment" of our Corporation, the system of road making introduced by Mr. McAdam should not be affected thereby. M.



WESTERMAN'S MACHINE FOR SPINNING HEMP.—The annexed drawing represents an end view of this *labor saving machine*; of its utility there cannot be a doubt. It has been in practical operation for some time past. We have seen rope-yarn made from it, and have no hesitation in saying that it is much superior to any we have ever seen produced by hand-spinning. To show the advantages it offers to those capitalists who will embrace an economical method of manufacturing rope, we cannot do better than insert the annexed letter from the patentee.

References—C, the comb plate; H, the top or pressure roller; K, the flyer; L, the spindle; *m*, the mangle wheel, which lifts the bobbin up and down; *n*, the lifting plate; *o*, the frame that supports the lifting motion; *p*, the pulley that drives the spindle; *q*, the driving pulleys; *r*, the bobbin; S S, boxes.—The process is begun at S S; is carried over the combs C, which cleanses and dresses the hemp, and lays the fibres in straight lines through the upper roller H, and under roller H, and afterwards through the rubber immediately under the roller H, as shown in the engraving, through the top of the spindle, where an aperture is made to receive it, and then through the flyer and round the bobbin.—[ED. M. M.]

To the Editor of the Mechanics' Magazine:

SIR,—I take the liberty of laying before you an exact detail of what my machines are capable of performing in ten hours' work, for your immediate information, and for that of your numerous readers:

Machinery to spin one ton of rope-yarns per day—Four machines called breakers, $2,000; 6 machines called finishers, $2,400; two spinning frames of 16 threads, $1,600; three doubling frames, $400; total, $6,400.

Manual labor per day—Two men to prepare the material, $2.50; ten boys or girls as tenders, $5.00; total, $7.50.

A shop 50 feet by 25 will be sufficient for the above machinery, placed at the head of a railroad, which will be the most advantageous, as the yarns will be laid in the walk the same as hand-spun yarns. The rent of such a room will vary according to situation, say, however, one dollar per day.

A four-horse power, steam or water, will be sufficient. The price of this will also vary according to situation, whether steam or water; however, say steam, which, including fireman, oil, coals, &c. will, I presume, be five dollars. When water-power can be had, it will be much cheaper. The cost price of such an engine, including mill gear, &c. &c. will be at *high rate*, $1,800.

Sundry other articles—Straps, tin boxes, and other unforeseen expenses, say $800.

Total expenses—Machinery, $6,400; steam engine, $1,800; sundry expenses, $800; total, $9,000,—which, at 6 per cent. per annum, is equal to $1.50 per day.

Daily expenses—Hand labor, $7.50; rent, $1.00; interest of $9,000, at 6 per cent. per day, $1.50; oil for machinery, 25 cts.; repairs, 75 cts.; expenses of engine, $5.00; insurance on $10,000, at 3 per cent. per day, $1.00: making the total cost of *one ton* $17.

The above prices are rated according to New-York rates. In other places the expenses will not be so great; situation makes all the difference. I do not pretend to know the true price of hand-spinning, as none of the workmen will inform me; however, upon the lowest scale, there is 40 per cent. in favor of machine-spinning on the above calculation. Where water power and manual labor is cheap, yarns may be manufactured for something near half price. From all I have been able to learn, the waste in hand-spinning is from 8 to 10 per cent. which added to the price of hand-spinning makes a very considerable augmentation in the price of yarns. In my plan I can *warrant* not more than 3 per cent. *loss*. My machine will, I am satisfied, bear a strict examination. I am, sir, yours, truly,

J. WESTERMAN.

MECHANICAL INVENTION.—The writer of this, while on a visit to the penitentiary, near the city of Trenton, New-Jersey, a few days ago, witnessed the operation of a machine for punching holes in bars of iron, which worked with extraordinary effect. It is a simple machine, easily constructed, at very little expense, and capable of being moved about and used in any position. It was employed in punching the holes for the perpendicular bars which are inserted through the flat cross bars for the iron grating to be used in the windows and doors of the new State Penitentiary. We noticed that in the space of one minute and a quarter, seven holes were perforated through a bar half an inch thick, each hole being one and a quarter inches in diameter—the bar being perfectly cold at the time. This effect is produced by the application of a lever power, and two or three rapid blows with a sledge hammer. This is certainly an important discovery in this branch of mechanics, and is the invention of some of the gentlemen engaged in the erection of the new Penitentiary.—[Emporium.]

PATENT RADIATOR, OR GLOBE STOVE.—A stove, with the above name, has recently been invented by Mr. WALTER HUNT, of this city, one of which was in operation a short time since at the Exchange. The main part of the stove where the coal is deposited is of a globular form, and from its peculiar construction, produces a greater quantity of heat from a given quantity of fuel than any other stove now in use. After repeated trials, the inventor informs us that it requires a very small quantity of fuel in comparison with many others now in use, and from what we witnessed we are disposed to entertain the same opinion. This article is well calculated for halls, churches, counting rooms, &c.; and, when once proved, will no doubt be generally sought after.

NEW SAW.—-A machine has recently been constructed by a Mr. Job White of Belfast, Maine, by which a saw, of the proper form is made to operate lengthwise of the log, cutting round it, and approaching the centre in a spiral direction, in such a manner as to cut the log into one continuous board. The board unwinds from the log, like the cloth from a weaver's beam.

This invention will be of great value to carriage makers, who use bass-wood boards for pannels, as they may be cut from much smaller, or even hollow logs.—[Northern Farmer.]

Babbage on the Economy of Manufactures.

[Continued from page 649.]

ON COMBINATIONS AMONGST MASTERS OR WORKMEN, AGAINST EACH OTHER.

270. There exist amongst the workmen of almost all classes, certain rules or laws which govern their actions towards each other, and towards their employers. But besides these general principles, there are frequently others peculiar to each factory, which have derived their origin, in many instances, from the mutual convenience of the parties engaged in them. Such rules are little known, except to those actually pursuing the several trades; and as it is of importance that their advantages and disadvantages should be canvassed, we shall offer a few remarks upon some of them.

271. The principles by which such laws should be tried are—

First, That they conduce to the general benefit of the whole of the persons employed;

Secondly, That they prevent fraud;

Thirdly, That they interfere as little as possible with the free agency of each individual.

272. It is usual in many workshops, that, on the first entrance of a new journeyman, he shall pay a small fine to the rest of the men. It is clearly unjust to insist upon this payment; and when it is spent in drinking, which is unfortunately too often the case, it is injurious. The reason assigned for the demand is that the new comer will require some instruction in the habits of the shop, and in the places of the different tools, and will thus waste the time of some of his companions until he is instructed. If this fine were added to a fund, managed by the workmen of the establishment, and divided at given periods, or destined for their relief in sickness, it would be less objectionable, since its tendency would be to check the too frequent change of the men from one shop to another. But it ought, at all events, not to be compulsory; and the advantages to be derived from the fund to which the workman is invited to subscribe ought to be his sole inducement.

273. In many workshops, the workmen, although employed on totally different parts of the objects manufactured, are yet dependent in some measure upon each other. Thus, a single smith may be able to forge in one day work enough to keep four or five turners employed during the next. If, from idleness or intemperance, the smith neglects his work, and does not furnish the usual supply, the turners (supposing them to be paid by the piece) will have their time partly unoccupied, and their gains consequently diminished. It is reasonable, in such circumstances, that a fine should be levied, in order to prevent their recurrence; but it is desirable that the master should have concurred with his workmen in establishing such a rule, and that it should be shown to each individual previous to his engagement; and it is very desirable that such fine should not be spent in drinking.

274. In some establishments it is customary for the master to give a small gratuity whenever any workman has exercised a remarkable degree of skill, or has economized the material employed. Thus, in splitting horn into layers for lanterns, one horn usually furnishes from five to eight layers; but if a workman split the horn into ten layers or more, he receives a pint of ale from the master. These premiums should not be too high, lest the material should be wasted by the workman in unsuccessful attempts; but such regulations, when judiciously made, are beneficial, as they tend to promote skill amongst the men, profit to the masters, and diminished cost to the consumers.

275. In some few factories in which the men are paid by the piece, it is usual, when any portion of work delivered in by a workman is rejected by the master on account of its being badly executed, to fine the delinquent. Such a practice tends to remedy one of the evils attendant upon that mode of payment, and greatly assists the master, since his own judgment is thus supported by competent and unprejudiced judges.

276. Societies exist amongst some of the larger bodies of workmen, and there are also others formed by the masters engaged in the same branches of trade. These have different objects in view; but it is very desirable that their effects should be well understood by the individuals who compose them; and that the advantages arising from them, which are certainly great, should be separated as much as possible from the evils which they have unfortunately too frequently introduced. Associations of workmen and of masters may with advantage agree upon rules to be observed by both parties, in the estimation of the proportionate value of various kinds of work executed in their trade, in order that time may be saved, and disputes between them may be prevented. They may also be most usefully employed in acquiring accurate information of the number of persons working in the various departments of any manufacture, their rate of wages, the number of machines in use among them, and other statistical details. Information of this nature is extremely valuable, both for the guidance of the parties who are themselves most interested, and also to enable them, on any application to government for assistance, or with a view to legislative enactments, to supply those details, without which the propriety of any proposed measure cannot be fitly decided upon. Such details may be collected by men actually engaged in any branch of trade at a much smaller expense of time than by persons less acquainted with and less interested in it.

277. One of the most legitimate and most important objects of such associations as we have just mentioned is to agree upon ready and certain modes of measuring the quantity of work done by the workmen. For a long time a difficulty upon this point existed in the lace trade, which was justly complained of by the men as a serious grievance; but the introduction of the "*rack*," which counts the number of holes in the length of the piece, has entirely put an end to the most fertile cause of disputes. This was adverted to by the Committee of 1812, and a hope expressed that the same contrivance would be applied to stocking frames. It would, indeed, be of great mutual advantage to the industrious workman and to the master-manufacturer in every trade, if the machines employed in it could register the quantity of work done, in the same manner as a steam engine does the number of strokes it makes. The introduction of such contrivances gives a greater stimulus to honest industry than can readily be imagined, and removes one of the sources of disagreement between parties whose real interests must always suffer by any estrangement between them.

278. The effects arising from combinations amongst the workmen are almost always injurious to the parties themselves. There are numerous instances in which the public suffer by increased price at the moment, but are ultimate gainers from the permanent reduction which results; whilst, on the other hand, the improvements which are often made in machinery, in consequence of "a strike" amongst the workmen, most frequently do an injury of greater or less duration to that particular class which gave rise to them. As the injury to the men and to their families is almost always greater than that which affects their employers, it is of the utmost importance to the comfort and happiness of the former class that sound views should be entertained by them upon this question. For this purpose a few illustrations of the principle which is here maintained will probably have greater weight than any reasoning of a more general nature, though drawn from admitted principles of political economy. Such instances will, moreover, present the additional advantage of appealing to facts known to many individuals of those classes for whose benefit these reflections are intended.

279. There is a process in the manufacture of gun barrels, for making what, in the language of the trade, are called *skelps*. The *skelp* is a piece or bar of iron, about three feet long, and four inches wide, but thicker and broader at one end than at the other; and the barrel of a musket is formed by forging out such pieces to the proper dimensions, and then folding or bending them round into a cylindrical form, until the edges overlap, so that they can be welded together.

About twenty years ago, the workmen, employed at a very extensive factory in forging these skelps out of bar iron, "struck" for an advance of wages, and as their demands were very exorbitant, they were not immediately complied with. In the mean time, the superintendant of the establishment directed his attention to the subject; and it occurred to him, that if the circumference of the rollers between which the bar iron was rolled were to be made equal to the length of a *skelp*, or of a musket barrel, and if also the grooves in which the iron was compressed, instead of being equally deep and wide, were cut gradually deeper and wider from a point in the rollers until it returned to the same point, then the bar iron passing between such rollers, instead of being uniform in width and thickness, would have the form of a *skelp*. On making the trial, it was found to succeed perfectly; a great reduction of human labor was effected by the process, and the workmen who had acquired peculiar skill in forming it ceased to derive any advantage from their dexterity.

280. It is somewhat singular that another and a still more remarkable instance of the effect of combination amongst workmen should have occurred but a few years since in the very same trade. The process of welding the *skelps*, so as to convert them into gun barrels, required much skill; and after the termination of the war, the demand for muskets having greatly diminished, the number of persons employed in that line was very much reduced. This circumstance rendered combination more easy; and upon one occasion, when a contract had been entered into for a considerable supply to be delivered on a fixed day, the men all struck for such an advance of wages as would have caused the completion of the contract to be attended with a very heavy loss. In this difficulty, the contractors resorted to a mode of welding the gun barrel, according to a plan for which a patent had been taken out by them some years before this event. It had not then succeeded so well as to come into general use, in consequence of the cheapness of the usual mode of welding by hand labor, combined with some other difficulties with which the patentee had had to contend. But the stimulus produced by the combination of the workmen for this advance of wages induced him to make new trials, and he was enabled to introduce such a facility in welding gun barrels by rollers, and such perfection in the work itself, that, in all probability, very few will in future be welded by hand labor. The process consisted in turning a bar of iron, about a foot long, into the form of a cylinder, with the edges a little overlapping.

It was then placed in a furnace, raised to a welding heat, and taken out, when a triblet, or cylinder of iron, being placed in it, it was passed quickly through a pair of rollers. The effect of this was that the welding was performed at a single heating, and the remainder of the elongation necessary for bringing it to the length of the musket barrel was performed in a similar manner, but at a lower temperature. The workmen who had combined were of course no longer wanted; and instead of benefitting themselves by their combination, they were reduced permanently, by this improvement in the art, to a considerably lower rate of wages: for as the process to which they had been habituated required peculiar skill and considerable experience, they had hitherto been in the habit of earning much higher wages than other workmen of their class. On the other hand, the new method of welding was far less injurious to the texture of the iron, which was now exposed only once, instead of three or four times, to the welding heat: so that the public derived advantage from the superiority, as well as from the economy of the process. Another advantage has also arisen from its introduction: for the new process is now applied to the manufacture of iron tubes, which can thus be made at a price which renders their employment very general. They are now to be found in the shops of all our larger ironmongers, in various lengths, and of different diameters, with screws cut at each end; and are in constant use for the conveyance of gas for lighting, or of water for warming, our houses.

281. Similar examples must have presented themselves to those who are familiar with the details of our manufactories, but these are sufficient to illustrate one of the results of combinations. It would not, however, be fair to push the conclusion deduced from these instances to its extreme limit. Although it is very apparent that, in the two cases which have been stated, the effects of combination were permanently injurious to the workman, by almost immediately placing him in a lower class (with respect to his wages) than he occupied before, yet they do not prove that *all* such combinations have this *effect*. It is quite evident that they have all this *tendency;* it is also certain that considerable stimulus must be applied to induce a man to contrive a new and expensive process; and that in both these cases, unless the fear of pecuniary loss had acted powerfully, the improvement would not have been made. If, therefore, the workmen had in either case combined for only a small advance of wages, they would in all probability have been successful, and the public would have been deprived for many years of the inventions to which these combinations gave rise. It must, however, be observed, that the same skill which enabled them to obtain, after long practice, higher wages than the rest of their class, would prevent many of them from being *permanently* thrown back into the class of ordinary workmen. Their diminished wages will continue only until they have acquired, by practice, a facility of execution in some other of the more difficult operations: but a diminution of wages, even for a year or two, is still a very serious inconvenience to any person who lives by his daily exertion. The consequence of combination has then, in these instances, been to the workmen who combined—reduction of wages; to the public—reduction of price; and, to the manufacturer—increased sale of his commodity, resulting from that reduction

282. It is, however, important to consider the effects of combination in another and less obvious point of view. The fear of combination amongst the men whom he employs will have a tendency to induce the manufacturer to conceal from his workmen the extent of the orders he may at any time have in hand; and, consequently, they will always be less acquainted with the extent of the demand for their labo than they otherwise might. This is injurious to their interests: for instead of foreseeing, by the gradual falling off in the orders, the approach of a time when they must be unemployed, and preparing accordingly, they are liable to much more sudden changes than those to which they would otherwise be subject.

In the evidence given by Mr. Galloway, the engineer, he remarks that, "When employers are competent to show their men that their business is steady and certain, and when men find that they are likely to have permanent employment, they have always better habits and more settled notions; which will make them better men and better workmen, and will produce great benefits to all who are interested in their employment."

283. As the manufacturer, when he makes a contract, has no security that a combination may not arise amongst the workmen, which may render that contract a loss instead of a benefit, besides taking precautions to prevent them from becoming acquainted with it, he must also add to the price at which he could otherwise sell the article, some small increase, to cover the risk of such an occurrence. If an establishment consist of several branches, which can only be carried on jointly,—as, for instance, of iron mines, blast furnaces, or a colliery, in which there are distinct classes of workmen,—it becomes necessary to keep on hand a larger stock of materials than would be required, if it were certain that no combinations would arise. Suppose, for instance, the colliers were to "strike" for an advance of wages: unless there were a stock of coal above ground, the furnaces must be stopped, and the miners also would be thrown out of employ. Now, the cost of keeping a stock of iron ore, or of coals, above-ground, is just the same as that of keeping in a drawer, unemployed, its value in money, (except, indeed, that the coal suffers a small deterioration by exposure to the elements.) The interest of this sum must, therefore, be considered as the price of an insurance against the risk of combination amongst the workmen; and it must, so far as it goes, increase the price of the manufactured article, and consequently limit the demand which would otherwise exist for it. But every circumstance which tends to limit the demand is injurious to the workmen; because the wider the demand, the less is it exposed to fluctuation. The effect to which we have alluded is by no means a theoretical conclusion: the proprietors of one establishment in the trade which has been mentioned think it expedient always to keep above-ground a supply of coal for six months, which is, in that instance, equal in value to about £10,000.

284. That combinations amongst workmen are productive of serious inconveniences to themselves, is admitted by all parties; and it is equally true, that, in many cases, a successful result does not leave them in as favorable a position as they were previous to the "strike." The little capital they possessed, which ought to have been hoarded with care for days of illness or distress, is exhausted; and frequently, in order to gratify a pride, at the existence of which we cannot but rejoice, even whilst we regret its misdirected energy, they will undergo the severest privations rather than return to work at their former wages. With many of the workmen, unfortunately, during such periods, habits of idleness are formed which it is difficult to eradicate; and, in all those engaged in such occurrences, the kinder feelings of the heart are chilled, and passions are called into action injurious to the happiness of the individual, and destructive of those sentiments of confidence which it is equally the interests of the master-manufacturer and of his workman to maintain. If any of the trade refuse to join in the "strike," the majority too frequently forget, in the excitement of their feelings, the dictates of justice, and endeavor to exert a species of tyranny, which can never be permitted to exist in a free country. In conceding, therefore, to the working classes, that they have a right, if they consider it expedient, to combine for the purpose of procuring higher wages (provided always, that they have completed all their existing contracts,) it ought ever to be kept before their attention, that the same freedom which they claim for themselves they must allow to others, who may have different views of the advantages of combination: and whilst every effort which reason and kindness can dictate should be made to show them the true consequences which will result from their conduct, the strong arm of the law, backed, as in such cases it ever will be, by public opinion, should be instantly and unhesitatingly applied, to prevent them from violating the liberty of a portion of their own, or of any other class of society.

285. Amongst the evils which ultimately fall heavy on the working classes themselves, when, through mistaken views, they attempt to interfere with their employers, in the mode of carrying on their business, may be mentioned the removal of factories to other situations, where the proprietors may be free from the improper control of their men. The removal which took place in consequence of the combinations in Nottinghamshire, of a considerable number of lace frames, to the western counties, has already been mentioned. Other instances have occurred, where the injury has been still greater, by the removal of a portion of the skill and capital of the country to a foreign land. Such was the case at Glasgow, as stated in the fifth Report, respecting artizans and machinery. One of the partners in an extensive cotton factory, disgusted by the unprincipled conduct of the workmen, removed to the state of New-York, where he re-established his machinery, and thus afforded, to rivals already formidable to our trade, at once a pattern of our best machinery, and an example of the most economical modes of employing it.

286. One of the remedies employed by the masters against the occurrence of combinations is to make engagements for long periods with the men, and to arrange them in such a manner that they shall not all terminate together. This has been done in some cases at Sheffield, and also in other places.

287. A system of paying the wages of workmen in articles which they consume has been introduced into some of our manufacturing districts, which has been called the "*truck system.*" As in many instances it has almost the effect of a combination of the masters against the men, it is a fit subject for discussion in the present chapter. It should, however, be separated from another system of a very different tendency, which will be first described.

The principal necessaries for the support of a workman and his family are few in number, and are usually purchased by him in small quantities weekly. Upon such quantities, sold by the retail dealer, a large profit is generally made; and if the article is one whose quality, like that of tea, is not readily estimated, then a great additional profit is made by the retail dealer selling an inferior article.

In such circumstances, where the number of workmen living on the same spot is large, it may be thought desirable that they should unite together, and have an agent, to purchase wholesale such articles as tea, sugar, bacon, &c. in most demand, and to retail them out at prices which will just repay their wholesale cost, and the expense of the agent they employ. If this be wholly managed by a committee of workmen, aided perhaps by advice of the master, and if the agent is paid in such a manner as to be interested in procuring good and reasonable articles, it may be a benefit to the workmen; and if the plan succeed in reducing the cost of articles of necessity to the men, it is clearly the interest of the master to encourage it. The master may indeed be enabled to afford them facilities in making their wholesale purchases; but he ought never to be in such a position as to have the least interest in the profit made by the articles sold. The men, on the other hand, who subscribe to set up the shop, ought not, in the slightest degree, to be compelled to make their purchases at it: the goodness and cheapness of the article ought to be their sole inducements.

It may perhaps be objected, that this plan is only employing a portion of the capital belonging to the workmen in a retail trade; and that, without it, competition amongst small shopkeepers will reduce the articles to nearly the same price. Perhaps there would be less reason to have recourse to it, if the objects of consumption required no *verification;* but combining what has been stated on that subject in the preceding pages of this work, on price, with the present argument, the plan seems liable to no serious objections.

288. The *truck system* is quite different in its effects. The master-manufacturer keeps a retail shop for articles in demand by his men, and either pays their wages in goods, or compels them by direct agreement, or incidentally by unfair means, to expend the whole or a certain part of their wages at his shop. If the manufacturer kept this shop merely for the purpose of securing good articles at fair prices to his workmen, and if he offered no inducement to them to purchase at his shop, except the superior cheapness of his articles, it would certainly be advantageous to the men. But, unfortunately, this is not always the case; and the temptation to the master, in times of depression, to reduce in effect the wages which he pays, (by increasing the price of articles at his shop,) without altering the nominal rate of payment, is frequently too great to be withstood. If the object be solely to procure for his workmen better articles, it would be more effectually accomplished by supplying a small capital, at a moderate rate of interest, and allowing the details of the shop to be conducted by a committee of workmen, in conjunction with his own agent, and allowing the books of the shop to be audited monthly by the men.

289. Wherever the workmen are paid in goods, or are compelled to purchase at the master's shop, the evils are very great; much injustice is done to the men, and much misery results from it. Whatever may have been the intentions of the master in such a case, the real effect is to deceive the workman as to the amount he receives in exchange for his labor. Now, the principles on which the happiness of that class of society depends are sufficiently difficult to be thoroughly understood, even by those who are blessed with far better opportunities of investigating them: and the importance of being acquainted with those which relate to themselves, is of more vital consequence to the workman than to many other classes. It is therefore highly desirable to assist them in comprehending those principles, by rendering all the relations in which they stand to each other, and to their employers, as simple as possible. Workmen should be paid entirely in money; their work should be measured by some unbiassed, some unerring piece of mechanism; the time during which they are employed should be definite, and punctually adhered to. The payments they make to their benefit societies should be fixed on such just principles as not to require extraordinary contributions. In short, the object of all who wish to promote their happiness, should be to give them, in the simplest form, the means of knowing before-hand the sum they are likely to acquire by their labor, and the money they will be obliged to expend for their support: thus putting before them, in the clearest light, the certain result of persevering industry.

290. The cruelty which is inflicted on the workman, by the payment of his wages in goods, is often very severe. The little purchases necessary for the comfort of his wife and children, perhaps the medicines he occasionally requires for them in illness, must all be made through the medium of barter, and he is obliged to waste his time in arranging an exchange, in which the goods which he has been compelled to accept for his labor are invariably taken at a lower price than that at which his master charged them to him. The father of the family, perhaps, writhing under the agonies of the tooth-ache, is obliged to make his hasty bargain with the village surgeon, ere he will remove the cause of his pain; or the disconsolate mother is compelled to sacrifice her depreciated goods in exchange for the last receptacle of her departed offspring. The subjoined evidence from the Report of the Committee of the House of Commons on Frame-Work Knitters' Petitions, shows that these are not exaggerated statements:

"It has been so common in our town to pay goods instead of money, that a number of my neighbors have been obliged to pay articles for articles, to pay sugar for drugs out of the druggist's shop; and others have been obliged to pay sugar for drapery goods, and such things, and exchange in that way numbers of times. I was credibly informed that one person paid half a pound of ten-penny sugar and a penny to have a tooth drawn; and there is a credible neighbor of mine told me, that he had heard that the sexton had been paid for digging a grave with sugar and tea; and before I came off, knowing I had to give evidence upon these things, I asked this friend to inquire of the sexton whether this was a fact: the sexton hesitated for a little time, on account of bringing into discredit the person who paid these goods; however, he said at last, 'I have received these articles repeatedly—I know these things have been paid to a great extent in this way.' "

Machine for cutting Grain.—[The Union, a paper published at Lexington, Vir., gives the subjoined account of an 'important invention.' We should like to have further particulars from Mr. McCormick—the price, &c.—and, if convenient, a drawing.]

We have omitted until now to furnish our agricultural friends with an account of a machine for cutting grain, invented by one of our ingenious and respectable county-men, Mr. Cyrus H. McCormick, and which we witnessed in operation in a field of grain during the late harvest in the neighborhood of this place. A large crowd of citizens were present at the trial of it, and although the machine (it being the first) was not as perfectly made as the plan is susceptible of, yet we believe it gave general satisfaction. We have been furnished with some certificates from several of our intelligent farmers, which we have appended to the following description of the invention.

This machine is so constructed as to leave a long or a short stubble, to operate alike well on tall or short grain. It is drawn by one horse walking by the side of the grain in shafts—just behind is a wheel about 2 feet 3 inches in diameter, which runs on the ground, by which the machinery is operated—having a cog-wheel with 40 cogs screwed to it. There is a small wheel (with 9 cogs) working in that, having another on the same shaft with 28, which works another small one, turning a small crank, behind the wheel, and from this crank the knife receives a vibratory motion. It is about 4½ feet long, with an edge somewhat like that of a sickle (having teeth,) straight and projecting into the grain at right angles to the horse. Behind the knife is an apron 5 or 6 feet long, of thin plank: and this frame connects with and is made fast to the frame which supports the main wheel—having a slide, or small wheel, under it, to support it, say about 5 feet from the main wheel. Along side the apron, by the point of the knife, and extending some distance before the knife, is raised a partition of cloth for the purpose of dividing and keeping separate the cut grain from that which is left standing. Then is a reel, as it is termed, which is about 6 or 7 feet in diameter, and the same length of the knife. This is made by framing arms in each end of a shaft, say 8, the points of which are joined together by pieces, called ribs, parallel to the shafts. The reel is revolved as the machine advances, by a band from the main wheel to one on its shaft, the object of which is to draw the grain back to the knife, which will be done whether straight or tangled, upright or leaning, unless below an angle of 45 deg., and to throw it on the apron. When a sufficient quantity shall have been collected for a sheaf, the hand who attends it draws it off the apron with a rake. The grain is prevented from slipping with the edge of the knife by pieces of wire projecting before it within 1 or 2 inches of each other.

I certify that, having used one of Mr. McCormick's Reaping Machines on my farm, I can assert that the Machine performs well on level and on steep land which is smooth, and that it will cut one acre per hour.

Arch'd. Walker.

July 18, 1833.

I certify that Mr. Cyrus McCormick's Reaping Machine, with a horse, was employed by me in the late harvest, and though I did not work it much, I was satisfied with its work. I tried it for an hour, and calculated what it would do for a day, and found that it would cut in a day about 12 acres. I done so more than once. The present year was unfavorable for the trial, as the wheat was lodged in the field. I was so satisfied that I bought one. This preparation was necessary: the ground must be clean—free from stumps and large stones.

James McDowell.

July 18, 1833.

I have seen Mr. Cyrus H. McCormick's Grain-cutting Machine in operation for two seasons—it cut for me this season. I think it will perform well, where the ground is clear of locks and stumps; and will be a great saving of hand labor, and can be so constructed as to cut much wider than at present, and I think it well worth the attention of the public. I think it will cut about twelve acres per day, by being well attended.

John Weir.

A Wych Elm, in Sir Wm. Baggott's Park, in the county of Staffordshire, as Sir Henry Capell told me, employed two men five days to fell it. It lay forty yards in length, the stool was five yards two feet across, fourteen loads of wood brake in the fall, forty-eight loads in the top, eighty pair of naves were made of it, besides eight thousand six hundred and sixty feet of boards and planks. It cost £10 17s. in sawing, and the whole was conceived to weigh ninety-nine tons. It was felled in 1674.—[Horticultural Register.]

Canada Cotton.—In the New-England Farmer, No. 17, vol. 10, page 131, it is mentioned in an article under the above head, that the lads of Dr. Stewart Chisholm, of Glengary, in Upper Canada, had spun a large quantity of this wild Cotton, and had it woven into cloth. The discovery of the capability of this article being converted into cloth is attributed to the above lads, and it is very probable that they had not known of the experiment being made before. But I find, by reference to the Domestic Encyclopædia, article Swallow Wort, and Milkweed, (other names for the plant,) that the American Editor of that work, Dr. Mease, mentions, on the authority of Dr. Guthrie, (Manchester Memoirs, vol. 5,) that "the plant is cultivated extensively in Germany, and that stuffs have been made of it which vied in lustre with the animal silk."

The botanical name of the plant is *Asclepias Syriaca.* It abounds throughout N. America, but especially in New-York, and further north, near rivers and streams; and I have often wondered that it has not been applied for the purpose of filling bed-spreads, as a substitute for the expensive article, eider-down, for which it would answer admirably; probably it might require quilting. This might be ascertained by experiment: the ingenuity of our women would doubtless find out the best way of using it.

I should suppose that the addition of some cotton to the silk of the plant would facilitate the spinning of it into thread.—[New-England Farmer.]

Superior Composition for Trees. Extract of a letter from the Hon. J. K. Guernsey, of Pittsford, to Wm. Prince and Sons. [From the New-York Farmer.

Recipe.—One part, say one quart, common tar. Two parts, say two quarts, chalk, finely pulverized, and sifted. Put the tar into an iron kettle; heat it, and whilst hot, stir in the chalk. Care should be taken not to boil it too much, either when first made or when using it, as that will make it too hard and brittle. Should it by accident become so, add tar, till sufficiently soft. When to be used, heat it over either an earthen or iron portable furnace, or fire made on the ground on or near the place where wanted, so as to boil, or to be sufficiently soft, which a little experience will show, and apply it with a small wooden or iron spatula, covering the wood entirely with a thin coat, and leaving no place for the water to get under the composition. It will remain on for years, but may be taken off whenever the bark shall have grown over the wood. It will be found upon examination that there is no dead wood under it. Any one who delights in seeing fine healthy trees, after having once fairly tried the experiment, will never abandon its use. It is particularly valuable for covering the stumps when old trees are headed down. This composition was invented, and an account of it published, by some gentleman, either of England or of Scotland, I think Sir Arthur St. Clair, soon after Forsyth first published the account of his composition for healing wounds in fruit trees, which is very troublesome to make, and still more so to use. It is, probably, known to many horticulturists, but ought to be known to all who cultivate fruit trees; and if you think the publication of these remarks will be useful, they are at your service.

NEW-YORK AMERICAN.

OCTOBER 12, 14, 15, 16, 17, 18—1833.

LITERARY NOTICES.

North American Review, No. LXXXI. *Boston:* Charles Bowen.—The opening article of this number is devoted—unworthily certainly as to the individual traveller, if not as to the whole tribe—to exposing the errors, absurdities and misrepresentations of the *Rev. Isaac Fidler's* book. It is not one that called for such grave interposition as that of our oldest Quarterly. As, however, the thing was to be done, we are well pleased to see it done so effectually. We have little taste, we confess, for this perpetual harping on the calumnies of British travellers, and agree very much with the opinion expressed by a correspondent in our paper, that these very calumnies derive their chief venom and effect from the sensibility evinced on our part. The following observations however, referring to the popular effervescence now going on in England, and to the influence—in favor of the greater happiness of the greater number—of American mind, as illustrated in American institutions, are of deeper reach than any thing connected with all the Fidlers that ever travelled:

It will hardly be disputed by intelligent observers at a distance, however some of the immediate actors may still disguise the fact from themselves, that this struggle is at bottom a war between American and British principles of government,—between Representative Democracy, with its equality of personal rights, its universal suffrage and its elective magistracies on the one hand, and the British Constitution with its privileged orders, and established church, its packed House of Commons, and its hereditary King and House of Lords on the other. We say not at present whether the American principles are better or worse in themselves than the British, nor whether it is or is not expedient to attempt to introduce them into England; we only affirm, that these American and British principles are respectively the real watch words of the two contending parties; and that, if the reformers ultimately obtain complete success, the British Constitution will go down, and the banner of pure representative democracy wave in triumph on the towers of Westminster Hall. It is needless to enlarge on this view of the subject, which we have already set forth very fully in two preceding articles, the general strain of which had the fortune to meet the assent of the most intelligent members of both the political parties in England. The present struggle in the mother country considered under this point of the view, is, therefore, a warfare betwen the American and English minds; or rather between the English mind as expanded, developed, invigorated, *reinforced* by exercising itself in untrammelled freedom for more than two centuries in the boundless field of action presented by the New World, and the same mind as modified by being to a certain extent ‘cabined, cribbed, confined, bound in,’ to the narrower sphere of the little old fast-anchored isle and the British Constitution. This struggle, so considered, is the third in which the same antagonist forces have appeared in hostile array, contending with each other for the ascendancy on different fields, and in different forms; but thus far always with the same success. In the first, which was the War of Independence, the American mind disputed with the British, by physical force, for the possession of its own territory,—in fact, for its existence; for with the loss of its scene of action, the spirit itself must have soon become extinct. In the second, which was the War of 1812, the battle-field was the ocean; and now the struggle, assuming for the present the form of a merely political and moral controversy has been carried home to the head-quarters of the enemy. The comparative strength of the two antagonist forces was pretty well tested in the two former trials, and the opinion on that head, to which their results would naturally lead, is not, from present appearances, very likely to be contradicted by that of the pending one. The American mind appears to have already achieved an entire victory over that of England, even on English ground. The whole British community,—the living, thinking, feeling, moving, acting mass, denominated *the Public* is thoroughly penetrated, imbued, *saturated*,—if we may use the expression,—with American principles. They have already swept down the Test and Corporation acts;—the restraints on the Catholics;—the Chinese monopoly, and above all, the old constitution of the House of Commons.

———Proximus ardet
Ucalegon.———

They are now fast undermining the Bank;—the national debt;—the Church;—the Peerage and the Throne. They already carry all before them in the House of Commons, the real seat of the Government,—occupy the ministerial benches, and thence issue their decrees in the name of the king. The great modern engine for maintaining political influence, which has been well described as a *Fourth Estate*, more important and powerful than the other three put together,—the Press,—is almost wholly with them. The adversary still presents a feeble show of resistance in the House of Lords, and a few journals hang out here and there the grand hailing signs of distress. It is even rumored that the conqueror of Waterloo is buckling on his rusty armor, and dreaming of a new career of domestic conquest. But what can a few gouty old gentlemen effect, against the almost unanimous will of the people? Even Wellington, though backed by the redoutable Christopher North,—and no one can estimate the talent and efficiency of either of these champions of legitimacy more highly than we do,—would find himself as powerless, in such a contest, as the renowned Knight of La Mancha and his squire in their encounter with the windmills. Mr. Fidler may call it infatuation:—possibly it is so:—but whether for good or for evil, the decree has gone forth and it must be executed.

The paper that next attracted our attention is a capital one on the Homeric poems—written with taste and much scholar-like research—in the course of which Coleridge's Introduction to the Classics is liberally praised and quoted. We are sure all readers will unite in admiring the annexed extract from that work:

‘I am not one who has grown old in literary retirement, devoted to classical studies with an exclusiveness which might lead to an overweening estimate of these two noble languages, (the Greek and Latin.) Few, I will not say evil, were the days allowed to me for such pursuits; and I was constrained, still young and an unripe scholar, to forego them for the duties of an active and laborious profession. They are now amusements only, however delightful and improving. Far am I from assuming to understand all their riches, all their beauty, or all their power; yet I can profoundly feel their immeasurable superiority to all we call modern; and I would fain think that there are many, even among my readers, who can now, or will hereafter, sympathize with the expression of my ardent admiration.

‘Greek,—the shrine of the genius of the old world; as universal as our race, as individual as ourselves; of infinite flexibility, of indefatigable strength, with the complication and distinctness of nature herself; to which nothing was vulgar, from which nothing was excluded; speaking to the ear like Italian, speaking to the mind like English; with words like pictures, with words like the gossamer film of the summer; at once the variety and picturesqueness of Homer, the gloom and intensity of Æschylus; not compressed to the closest by Thucydides, not fathomed to the bottom by Plato, not sounding with all its thunders, nor lit up with all its ardors, even under the Promethean touch of Demosthenes! And Latin,—, the voice of empire and of war, of law and of the state; inferior to its half-parent and rival in the embodying of passion and in the distinguishing of thought, but equal to it in sustaining the measured march of history, and superior to it in the indignant declamation of moral satire; stamped with the mark of an imperial and depotising republic; rigid in its construction, parsimonious in its synonymes; reluctantly yielding to the flowery yoke of Horace, although opening glimpses of Greek-like splendor in the occasional inspirations of Lucretius; proved, indeed, to the uttermost by Cicero, and by *him* found wanting; yet majestic in its barreness, impressive in its conciseness; the true language of History, instinct with the spirit of nations, and not with the passions of individuals; breathing the maxims of the world, and not the tenets of the schools; one and uniform in its air and spirit, whether touched by the stern and haughty Sallust, by the open and discursive Livy, or by the reserved and thoughtful Tacitus.

‘These inestimable advantages, which no modern skill can wholly counterpoise, are known and felt by the scholar alone. He has not failed, in the sweet and silent studies of his youth, to drink deep at those sacred fountains of all that is just and beautiful in human language. The thoughts and the words of the master-spirits of Greece and Rome are inseparably blended in his memory; a sense of their marvellous harmonies, their exquisite fitness, their consummate polish, has sunken forever in his heart, and thence throws out light and fragrancy upon the gloom and the annoyances of his maturer years. No avocations of professional labor will make him abandon their wholesome study; in the midst of a thousand cares he will find an hour to recur to his boyish lessons, to re-peruse them in the pleasureable consciousness of old associations, and in the clearness of manly judgment, and to apply them to himself and to the world with superior profit. The more extended his sphere of learning in the literature of modern Europe, the more deeply, though the more wisely, will he reverence that of classical antiquity; and in declining age, he will retire, as it were, within a circle of his school-fellow friends, and end his studies, as he began them, with his Homer, his Horace and his Shakspeare.’

The article on the History of Maine, by Mr. Wm. D. Williamson, and that on Dante, are both well done. That on Maine concludes with a statement, in the nature of a recapitulation of a paper in a former number, of the merits of the boundary question still pending between Maine and New Brunswick. We have only room for one more extract; and that relates to that excellent publication, *Woodbridge's Annals of Education*. At this moment, when the public mind is alive to the importance of both extending and improving common education, there is no work more likely than this to lead opinion in the right channel, or to afford accurate information of what has been done and is doing in other countries as well as our own, in this most important matter. It is thus spoken of by the Reviewer:

The work before us, is, we believe, the only one of the kind in this country, and we regret to learn that the patronage which it has hitherto received is not sufficient to justify its continuance. We sincerely hope, that efforts will immediately be made, with all the necessary vigor and spirit, by the friends of education, throughout the country, for placing it upon a better footing. We consider it entitled, not less by the manner in which it is conducted, than by the nature of the subject, to the support and encouragement of all who are really interested in the cause. Few persons in the United States unite so many qualifications for carrying on such a work as Mr. Woodbridge; and no one could employ them with a truer and more disinterested zeal for the object. After devoting several years to the business of practical education at home, and making himself known to the public by elementary works of acknowledged value and great popularity, Mr. Woodbridge travelled extensively in Europe, examined on the spot the most approved and celebrated institutions for education;—became acquainted with their directors, and made himself familiar with the literature of the subject. On his return, he brought with him a large collection of the most valuable books and journals, that treat of it, mostly in the German language, and wholly unknown to the public, both here and in England. Provided with this rich stock of materials, and wishing to turn them to the best possible account for the good of the cause, he determined to publish them in a periodical form; and became the proprietor and editor of the *Journal of Education*, which had just before been established in this city; and to which, in order to mark the commencement of a new series, he gave the title of *American Annals of Education and Instruction*. In this form the work has been continued for nearly three years; and in the value and variety of its contents has fully realized the highest expectations that had been formed of it. We should regard its discontinuance as a serious public misfortune.

There are two large octavo volumes now formed by the numbers heretofore published of this magazine, and in no way possibly could more substantial aid be afforded to Mr. Woodbridge's meritorious efforts, or more just notions acquired within the same limits, than by purchasing these two volumes, and continuing the subscription to it for the future. We are sure no one interested in education would regret the expenditure occasioned by such purchase and subscription.

Polynesian Researches, Vols. III and IV; by Wm. Ellis. New York: J. & J. Harper.—This publication, now completed, is creditable in every way to the press of the Messrs. Harpers. It was well selected, as a work fitted to interest all classes of readers, and it is got up in excellent style.

Travels in America; by Geo. Fibbleton, Esq., Ex-Barber to the King of Great Britain. New York: Wm. Pearson.—This is intended for a satire on the misrepresentations, hasty judgments, and sweeping conclusions of British travellers. The idea is not a bad one; but in carrying it out, there is so much exaggeration as to defeat the object in view. There are a few good hits, but as a whole it lacks wit and invention.

History of Priestcraft in all Ages and Nations; by Wm. Howitt. Edited by a clergyman of New York, and *reprinted for the booksellers!*—Such is the title-page of this work—"reprinted for the booksellers!" as though in this land, too, of entire freedom from all religious establishments, there were yet so much of the spirit of the craft among us, as to render it hazardous to the interests of a publisher to be known as connected with a book attacking and exposing the vices and crimes of priests, vested with the authority of law to force or punish converts. The writer is the Quaker poet Howitt. The object is avowed to be, to aid "in the grand modern employment, to turn the world upside down;" and it is manifestly written under a still smarting sense of the wrong and insult heaped upon the Quakers, in the origin of that sect, and of the enormities of the system of theEnglish Hierarchy which compels all faiths to contribute to swell its already overgrown temporalities. It may too be allowed, without seeming to enter upon an indiscriminate crusade against all established religions and their ministers, that there is enough in the past history of the persecutions of the Romishand English church, to rouse the sensibilities and excite the resentments of even lamb-like natures. But in drawing a fair conclusion, the benefits conferred in various ways by the Priesthood—the virtues, the devotedness, the learning, and the abilities, which have illustrated the lives and career of so many of its members in all countries—should be taken into the account; and though the decision then might, as we think it should, be against any priesthood invested with temporal authority, it would at the same time be found that the institution has not been one, all of evil, as this book would establish. Mr. Howitt has brought to the research much learning, and certainly the freest and boldest spirit of inquiry. It is a plea against all forms, ceremonies and establishments, connected with church worship, and is of course ex-parte; and this should be borne in mind by those who read it.

The Right Moral Influences of Liberal Studies: a Discourse delivered at the Annual Commencement of Geneva College, Aug. 7th, 1833, at the request of the Alpha Phi Delta and Englossian Societies, by Gulian C. Verplanck: New York, J. & J. Harper; 12mo. pp. 47.—Like almost every thing else from the same accomplished pen, this Discourse is distinguished by a liberal and elevated tone of thinking, by scholarlike illustration conveyed in a pure and polished style, and by an immediate moral and national tendency. We have marked a number of passages for extracts which speak for themselves; but the reader, to appreciate their force and application, should read the context to which. The following striking quotations will prove a stronger recommendation than any thing we can here add: *

The creative genius of the most original of the writers of our own day, even of those who are commonly thought self-taught men, must have borrowed the groundwork of its inventions or speculations from past events, and doubtless owed much of its elevation, excitement, and splendour, to the poets, authors, or orators of former ages.

The inspiration of the master-spirits of other times, glides like the electric fluid from man to man, until its flame lights up in some distant but congenial breast, where, probably, their own words and thoughts have never directly reached. Burns, for instance, original and fresh from nature's mint, as his glowing lay confessedly is, could scarcely have been what he was, had Homer and Horace never lived,—had not the common mind of his age and nation and thus, incidentally, his own, been influenced and modified, been exalted and refined, by the warlike and trumpet tongued muse of Homer and the laughing wisdom of Horace. Now the poems of Homer and Horace are but the product and the proof of a fore-gone and multitudinous activity of thought, passion, and action, in successive generations of men who were once interested and agitated by plans, schemes, and contests, by emotions, rivalries, strifes, ambition, and pleasures, which have long been stilled for ever; like the waves that in those days broke over the rocks of the Egean or foamed in the stormy Adriatic. Thus the fathers of poetry and eloquence owed the education of their minds and drew the aliment of their thoughts from men and deeds now hidden in the dark domains of that mysterious and unrelenting Past, where, in the solemn strains of one of the poets of our own land;

Far in thy realms withdrawn
Old empires sit in sullenness and gloom,
And glorious ages gone
Lie deep within the shadow of thy womb.
In thy abysses hide
Beauty and excellence unknown. To the
Earth's wonder and her pride
Are gathered, as the waters to the sea.
Full many a mighty name
Lurks in thy depths, unuttered, unrevered,
With thee are silent Fame,
Forgotten arts and wisdom disappeared.

* * * * * *

The object of all scientific inquiry is Truth. The severe analysis of Reason leads us step by step to the laws of universal and necessary Truth. Physical observation and experiment enable the Philosopher to infer the general truth of nature from millions of individul instances. Virtue, and Right, and Duty, are the great objects of moral and metaphysical science and of legal ethics; yet these are but other names for moral Truth. Nay, that literature which lies within the immediate domain of the imagination, has its origin and the source of its charm in Truth alone. It is from nature only that the poet, the author, the orator, who pleases or who rules widely and long, must obtain the materials of his invention, the airy forms of his fancy and the torrent-like excitement of his impassioned fervour. Human sympathy is the source of their charms, their interest, and their control; but that sympathy can be awakened only by the truth of feeling and the reflection of nature. The study of truth then, not as modified by accident, not as limited and narrowed in particular and individual instances, but of Truth, either universal and general, is the business of the scholar. Can then the noblest exercise of the reason, the most excellent gift of heaven, be designed for any but worthy uses? Can man's misuse, make vain the precious gift and turn it into a curse?

The sacred light of day which rises sweet and pleasant to mortals, chasing away darkness and unhealthy vapours, and pouring floods of warmth and gladness upon the earth, may aid the wicked in their craft, gild the tyrant's pomp, or beam brightly upon fields of carnage. Still its ethereal stream flows on pure and bounteous, shining upon the evil and the good; undiminished and untainted by earth's ingratitude or corruption. Even so it is with the holier light of Truth.

Philosophical Conversations; by Fred. C. Bakewell; 1 vol.: Carter & Hendee, Boston.—These Conversations explain in a familiar way the causes of many daily occurring natural phenomena, which from the familiarity pass unregarded, or are deemed too abstruse to be examined by persons not particularly devoted to scientific inquiries. The subjects, though occasionally naturally suggested by each other in something like methodical order, and consequently so treated, are selected from those only which come within the range of daily observation; and are set forth in the best manner to excite a taste for scientific inquiry, while they impress themselves forcibly upon the mind of the student.

The work, we should think, would prove both useful and agreeable to the young student of nature, especially as the present edition is furnished with notes and questions for review, which will tend much to facilitate and systematize the information conveyed. *

New Publications.—We are happy to close our notices of this week, (though necessarily omitting some till another day,) with the promise of one of the most excellent and approved undertakings in the publishing way, that has claimed public attention in a long time. We allude to the

Library of Standard Literature, now in course of publication, by Mr. George Dearborn of this city. The works of Edmund Burke, in three volumes, with engravings and a memoir, are, we presume, from the elegant specimen we have seen, already finished, the first that will appear. Among those that are to follow, we find enumerated the works of Mackenzie, the poems of Dryden, Lady Montague's works, the writings of Crabbe, and Milton's poetical and prose works, &c.; forming one of the most valuable collections of the best works in British literature that could be chosen. We like the idea much—in the prevailing rage for getting up new "Libraries" of treatises upon every subject, written to order in a given time—of returning to those old authors, who, having stood the test of opinion through all the fluctuations of taste and fashion, like ancient gems, only require a new setting to make their superior value acknowledged everywhere. Mr. Dearborn,—who, we have before had occasion to say, when noticing the editions of Byron, Johnson, and other elegant works from his press, is one of the most tasteful publishers in this country,—is the one of all others to have entered upon the present undertaking. His previous publications are amongst the few issued in New York, which, for typography and correctness, can compete with the Boston press; and from the specimen of printing and paper in Burke's works, above alluded to, we are confident that the extensive undertaking now in hand, will be executed as it ought. Though not altogether agreeing with that Hibernian friend of the palette, who thought that the frame is the *heart* of the picture, it must be considered that to one who purchases books to be preserved in a library after their first reading, it is no little recommendation to have them in a dress worthy of the thoughts they perpetuate. *

SUMMARY.

JOSEPH LANCASTER.—This individual—from whom the Lancasterian scheme of instruction takes it name—is now in poverty in this city, after some [thirty-five] years spent in efforts to improve the education of the rising generations. To him, and to the impulse which his efforts gave to the public mind and public purse in the cause of education, hundreds of thousands, nay millions, owe it, that they are not still degraded by ignorance; and yet he, the benefactor of so many, is in want. On this head we can say nothing so strongly, as the annexed paragraph from a recent number of the New Monthly Magazine:

The Reward of Merit.—The following paragraph has (as the phrase is) gone the round of the news papers:—

"Joseph Lancaster, the celebrated founder of the new system of education, is residing in poverty at Montreal, in Canada, labouring for his living, and the maintainance of a wife and family."

Here, indeed, is an illustration of the march of intellect, for in this case intellect has been obliged to *march* to Canada, besause it found no reward in its native country. It has been, indeed, truly said that "we pay least of all to those who instruct us," since the founder of a system of education is obliged to resort to manual labour abroad, because at home he did not meet with adequate encouragement. An Italian fiddler who plays upon one string, (so well is the English character known to foreigner.,) visits our country with the professed object of taking away away from it so many thousand pounds. He observes, "I know John Bull has got them for me," and the result proves him to be right. Had Mr. Lancaster been able to play the overture to "Tancredi" upon a single string of a piano, or to stand upon his little finger for a quarter of an hour, without fatigue, he might have counted on making a rapid fortune at home, the only drawback then being the fact of his being an Englishman. Could he contrive, instead of consulting his intellect, to *stand upon his head*, in the literal sense of the words, he would be more likely to prosper than he is at present, with no other claims than that of being the founder of a system for the instruction of his species.

An annuity is raising in England which will, it is hoped and believed, provide for the future wants and comforts of Joseph Lancaster; but mean time he and his family must live; and to that end he needs the aid of those among whom he is now resident. An inconsiderable sum will enable him to publish a book containing his latest views and plans of Education; from the sale of which he hopes to derive the means of existence till the projected annuity becomes available. Such a sum, he cannot fail, we are sure, to obtain.

Dr. Dekay, in his "Sketches of Turkey," bears the following testimony to the generous philanthropy of the American and other Missionaries:

The efforts of the physicians at Smyrna during the fearful season of cholera were nobly seconded by many of the foreign missionaries. Among these I heard the labors of Mr. Brewer every where spoken of in terms of admiration. Furnished with the requisite remedies, he scoured every lane and alley, proclaiming his benevolent intentions, and distributing even food to the needy. Let history, when it repeats the story of the good bishop of Marseilles, who, after all, was merely a soldier at his post, also record the benevolence and the contempt of danger and of death evinced by an American stranger within the pestilential walls of Smyrna.

The New Orleans Bee of the 27th ultimo says, "whether the epidemic is abating or not, we cannot tell, as we have no official report from our Board of Health; but the certainty is that the number of deaths daily diminishes." The number of interments on the 25th was thirty, and on the 26th, twenty-two.

Heavy Loss.—We learn from the Maysville Eagle of the 26th ult. that on the 16th of September, a flat boat loaded with merchandize, ran foul of a snag, about twenty miles above Maysville, and sunk in forty or fifty minutes, in about five feet water. The greater part of the cargo, consisting of dry goods, groceries, hardware, books, stationery, &c. and variously estimated at from sixty to seventy-five thousand dollars, could not be removed until after the boat sunk, and ughly immersed in the water. They were landed at Maysville, thoroughly dried and re-packed. The loss is estimated at 50 per cent. upon cost. It was not known what amount of insurance, if any, was effected upon them.

Mr. Editor: I had the pleasure of seeing the *Portrait* of Judge Howell, as mentioned in yesterday's *American*, while painting at Messrs. *Waldo & Jewett's* studio, which I learn is placed in the Court Room in Canandaigua as the foundation of a Legal Portrait Gallery—an idea which confers much credit on the western Bar of our State. We recommend them also to add to their collection those of *Oliver Phelps* and *Nathl. Gorham*, who were the purchasers and pioneers of that county, in 1787, at *eight cents!* per acre.
AMICUS.

The engineer on board the St. George has just applied a very useful piece of machinery for supplying water to the boilers of that boat, when the engines are not at work, at any time that there is steam in the boilers. Hitherto, when the engines have been stopped, a portion of steam has been blown off, and the water supplied by means of a manual forcing pump. Now, by the addition of a small cylinder and piston, with a pipe connected with the main steam channel of the large engine, the steam usually discharged by the safety valve is usefully expended in keeping up the required supply of water, thus saving a waste of labor, and securing at the same time a more certain and steady supply of water than it generally otherwise furnished. If this experiment is scccessful, as the machinery is simple, and requires but a small space, it will, doubtless, be pretty generally adopted by the boats on the river.—[Montreal Daily Adv.]

We copy the following from a Buffalo paper:—

Loss of the Steam Boat George Washington.—Capt. Walker.—This new and splendid boat went ashore in the gale on Wednesday last, about ten o'clock in the morning, on the beach two miles above Long Point, on the Canada side of Lake Erie. We learn from some of the passengers that after riding at anchor for some hours, the gale increasing and the engines from the strain of the ship becoming unmanageable, it was determined for the safety of the passengers and crew, amounting to about seventy souls, to run in shore, where she now lies, twenty rods from the waters edge, broken in two. All the individuals on board were saved, except one, a Mr. Millerd of Lodi, Seneca county, who, notwithstanding the expostulations of Capt. Walker, ventured to swim to the shore; he sunk a short distance from the vessel.—The Washington was not insured. Loss about $60,000. She belonged to the Huron Steam Boat Company. The stock was owned in this city, Detroit, Hnron, Ohio, &c.

[*From the New Bedford Mercury.*]

TO NAVIGATORS.—It appears by an advertisement in the Boston papers, signed by the President and Secretary of the Boston Marine Society, that a new edition of Norris' Chart of the North American Coast, published in London, May 1, 1832 is materially incorrect. Some of the principal head-lands in Boston Bay and vicinity as laid down in said Chart, are more than thirty miles from their true position according to the latest edition of Blunt's Tables and Chart of 1832, which is deemed the best authority now in print. The longitudes of a few of the most prominent points, as laid down in the two charts referred to, are subjoined:—

	Blunt's,	*Eng. Ch't,*	*Errors of Eng. Chart.*
Block Island Light,	71 37	71 23	14 miles.
Gay Head,	70 52	70 27	25 "
Sandy P't, Nantucket,	70 03	66 26	36 "
Chatham,	69 57	69 17	40 "
Cape Cod,	70 04	69 32	32 "
Boston,	70 54	70 20	34 "
Thatcher's Island,	70 34	70 03	31 "
Mount Desert,	68 07	67 59	8 "

The latitudes of the above places by the English Chart are more correct, the greatest variation from Blunt's being only three miles.

The ninth ascension of Mr. Durant from Baltimore was made successfully on Monday last. After being in the air an hour and 47 minutes in which time he travelled 23 miles, descending occasionally so near the earth as to converse with persons on it, and then rising again, this skilful Aeronaut landed, if we may so express it, on board the steam boat Independence in the Chesapeak bay, over which he had been sometime hovering, and secured his baloon and its accessories without wet or danger of any kind on the deck of the boat.

FOREIGN INTELLIGENCE.

COMPENDIUM OF VARIETIES

[*From late foreign papers received at the office of the New York American.*]

Great interest, it is said, is making to obtain the new appointments of magistrates in the West India islands; though the smallness of the salary (£300 a-year) does not seem to hold out any very tempting allurement.—Considerable surprize was excited among the middle orders in the neighbourhood of Chichester, by the spectacle of ladies of high rank (visiters at the Goodwood races) frequenting the E. O. booths on the course! We adverted to the same fact in noticing the Ascot races of last year. What may have been originally attempted as a frolic appears to have become a confirmed habit.—A portion of the City capitalists, and that an important one, is at this moment deeply engaged in speculation in the articles of indigo, sugar, pepper, coffee, wool, and cotton, by which their prices have been very materially enhanced, in some cases equivalent to a rise of fifty per cent. or more.—A railway communication is proposed between Edinburgh and Leith, the cost of which is estimated at £120,000; the estimate of revenue £28,000 a year, or twenty per cent. on capital sunk.—By the new stamp act, every dealer in stamp is to be made subject to domiciliary visits, and to giving bond with two sureties, for such amount as the Commissioner of Stamps requires, with a view of improving the Stamp revenue.—The heir to Sir Harry Goodricke's Irish estates, exceeding £20,000 a year, derived from his late uncle, Lord Clermont, is a minor, eldest son of the late Chichester Fortescue, Esq., formerly Lieutenant-Colonel of the Louth Militia.—At one of the London Police-offices, a simple looking countryman complained that a woman whom he had lately married under the belief that she was a maiden, had brought him home five children, born at Devizes, in Wiltshire, and "when he remonstrated, she gave him a blow on the nose." The magistrate said he must apply to the authorities at Devizes.—The gas lamps of London alone consume not less than 38,000 chaldrons of coals in the year. The gas pipes of the metropolis were, in 1830, of the total length of upwards of 1000 miles.—The Earl of Dundonald (Lord Cochrane) is among the arrivals in the Isle of Wight. It is said the object of the noble earl's visit is to give instructions for the building of a steam-vessel on a new principle.—Thursday morning, about 7 o'clock, as three boys, named Mullins, Wason, and Mills, the sons of fishermen, residing in Floodgate street, Greenwich, were proceeding down the Thames in a boat, they were run down opposite Bugsby's Marshes, Blackwall-reach, by a lighter that had escaped from its moorings, and all three perished.—It has been stated that a noble duke (Wellington?) intends to break up his establishment and retire to the Continent. The noble duke alluded to has for some months past reduced his domestic establishment to the lowest scale, retaining a single attendant. Rumor states the same noble duke to be about to re-enter the matrimonial state, and the lady named as the object of the noble duke's attraction has disposed of her town residence.—In the year 1732, the revenue of the Society for Promoting Christian Knowledge was about £6000, the number of its members 460, and the issue of its publications about 16,000. In the year 1832 the revenue of the society amounted to £66,000, the members to 15,000, and its publications to nearly a million and three-quarters. Thus, in the course of a century, its operations have increased a hundred fold.—The celebrated race-horse Birmingham, formerly the property of Mr. Beardsworth, and afterwards of the late Thomas Scarisbrick, Esq., of Scarisbrick-hall, has been purchased by private contract, by General Lounin, for the purpose of being sent to Russia. The price was £1,000.—Sir Francis Burdett gave a grand entertainment lately to the members of the Bonaparte family, at his mansion in the Green Park.—The rumour that Mr. O'Connell is about to take office is gaining ground, although denied by his friends. The Conservatives, however, maintain that he is, and that Lord Anglesey and he are making up their old quarrels.—Mr. John Sheehan, one of the proprietors of the *Comet* weekly paper, was convicted last spring of a libel on the clergy, and sentenced to 12 months' imprisonment in Kilmainham, has been liberated by order of Government. This act of clemency has been accompanied by a curious condition, namely, that Mr. Sheehan shall not appear in the city of Dublin until the 11th of January next. This prohibition has puzzled the *quids.*—By a return made to Parliament, it appears that Catholics have, since 1829, been admitted to the following Irish corporations: Athlone, Athy, Callan, Cashel, Wexford, and Youghal. No Roman Catholics have been admitted to the other corporations.—The Russian Consul General, Mr. Banckhausen, left town on Saturday week for St. Petersburgh. He is said to have been the bearer of important despatches for the Russian Government.—A loan of £4,000,000 sterling is understood to have been lately negotiated for the Austrian Government, by an eminent capitalist in the city. The terms have not yet transpired, nor is it, we believe, intended to bring it into market at present.—The Temps states that the number of young men who have already given their names to undertake the pilgrimage to Prague amounts to 4000, all of whom, it is said, have engaged to mount the white cockade as soon as they have passed the frontier of France.—The German papers state, that the King of Naples has determined to dissolve the monasterial establishments in Sicily, and to sequestrate their property to the use of the state, giving the ecclesiastics who shall be sufferers by the transaction an indemnity in the shape of annual pensions. The Sovereign Pontiff objects to this interference with the rights of the Church, as an act of disobedience to his authority. The King of Naples is said to plead in vindication of his own proceeding an ancient convention between the two Courts, by which the King is enabled to alienate eclesiastical property in Sicily in time of need, with the special permission of the Holy See.—It is now confessed, that the orders given to reinforce the Austrian troops in the Tyrol are not to be attributed merely to local circumstances, but that the present state of Switzerland has partly given occasion to them. Probably a corps of Austrian troops will be stationed on the Swiss frontiers.—The Sultan is now said to be making preparations for attacking, perhaps in order to retake, the places which he had ceded to Ibrahim Pacha, who, upon his side, is not inactive in his measures of defence.—The latest accounts received in Paris from Algiers are of a very melancholy character. It appears that the French have had some sharp work with the Arabs at Oran.—The Duchess de Berri arrived at Rome on the 13th instant, and it is said that her husband had been appointed Major Domo by the King of Naples.—The meeting of the Emperor of Austria and King of Prussia took place at Toeplitz on the 16th instant; but whether any consequences are likely to result from it must be left to that class of politicians who only speculate the more boldly for the want of data to go upon.—The King of the French, accompanied by his sons the Duc de Nemours and the Prince de Joinville, and attended by the Minister of Marine and a brilliant staff, left St. Cloud for Cherbourg on Monday.—All the private letters lately received from Spain (without exception) speak of a sanguinary civil war as inevitable in that country on the death of Ferdinand. The only hope that remained to qualify that melancholy anticipation rested on the success of the cause of Donna Maria in Portugal before the demise of King Ferdinand; an event which would deprive the absolute party in Spain of the support of Don Miguel, to which they looked with confidence.—Letters received through Italy state, that the positive evacuation of Greece by the French had commenced on the 3th ult.—The departure of her Majesty Donna Maria from the French capital for Havre took took place at ten o'clock in the forenoon of Tuesday last. Her Majesty was accompanied by the Duchess of Braganza and the Marquis de Loule, and attended by the Marquis de Rezende, and indeed every individual of her suite and household.—Considerable agitation still exists in Germany. The senate of Frankfort held an extraordinary sitting on the 22d instant, in consequence of an intimation from the German Diet, that it was expedient that the seat of Government should be garrisoned by federal troops, and that, in consequence, 1,000 additional Austrian soldiers would be quartered at Sachenhausen, and 1,000 Prussian troops at Frankfort. The Senate, having no alternative, submitted to the decree of the Diet and directed that the old convent of the Dominicans should be fitted up as a barrack for those soldiers.—It is said that the French Government feels indignant at the proposed marriage of Queen Donna Maria and the Duke of Leuchtenberg, son of the late Eugene Beauharnois.—Order appears to be pretty generally re-established in Switzerland.—Mr. Charles Kemble and Miss Fanny Kemble realized upwards of £11,000 the first season for their theatrical exertions in the United States. They have now commenced a second season, and are not expected in England until next year.—By advices from Peru, we learn that Col. J. O'Brien had quitted Lima, in order to explore the extensive Indian country between Cusco and La Paz, which has not been travelled over by any European since the conquest of it by Pizarro.—The Head money, or pecuniary gratuity awarded for captured slaves, during 1827, was £61,548. 10s.; 1828, £29,273. 14s. 3d.; 1829, £66,047. 10s.; 1830, £74,239. 18s. 1d.; 1831, £17,683. 15s.; 1832, £20,242. 10s.; and 5th January, 1833, to the 5th July, 1833. £5,837. 10., making a total of £274,973 7s. 4d.—Mrs. C. Kemble is in Paris, superintending the education of her daughter, a lady of great promise in a department of the theatrical profession quite distinct from the line adopted with so much success by her sister.—The *Frankfort Journal* says, "We learn, by a letter from Chelthain, in Saxony, that, on the 21st instant, a flock of between 600 and 800 storks alighted near that town, and afterwards resumed their flight towards the south. As the migration of these birds uniformly takes place in the autumn, this early passage must be considered as arising from some unusual natural cause."—We can state, from the most undoubted authority, that the King of France will sanction the formation of a railway from Paris to Dieppe, with a branch to Havre, on the French side, so as to cause a more rapid communication with London, by way of Shoreham. The English Engineer, Mr. Vignolles, has personally received the assurances of the support of the French King and the royal family of France. M. Thiers, the celebrated French Engineer, will immediately accompany Mr. Vignolles to England, to survey our railroads, for the promotion of the plan, which is confidently considered as likely to be successful.—A new writing-paper has just been introduced, which by means of a chemical preparation it undergoes, has the singular property of becoming perfectly black whenever it is touched with any fluid. It is only necessary, therefore, to write on this paper with a pen dipped in clean water, to produce a distinct and legible communication.—The state of Zacatecas, in South America, has passed a law, making it capital to oppose the actual form of Government, by speech or writing, or the individual independence of the States!—On the 11th of last month there was a fall of snow at Rottenham, near Nuremburg.—Last week an old servant of King Leopold, who had been his coachman for 16 years, walked out at a window whilst in a state of somnambulism, and was killed on the spot.—A band of 27 thieves have been detected at Naples, consisting principally of coachmen and grooms belonging to wealthy foreign families.—In the report of the commissioners for auditing Irish accounts, just printed there is the following item in the Belfast Ballast-office return: "*Pumping water* out of *dry* docks £89."—Sir Andrew Agnew was at the Opera recently. A person, in a waggish mood, shouted loudly and lustily, it being *One* on the Sunday morning, "*St. Andrew Agnew's carriage stops the way!*"—"How is this?" said O'Connell to one of the tail on a late occasion, when even his relatives would not vote with him, "How is this? did you not promise me if I had you returned you would vote with me through '*thick and thin?*'" "Be aisy, be aisy, and so I did," replied the honest patlander; "but you did not tell me that it was to be *all thick!*"

The Emperor of Russia has appointed his son, the Grand Duke Constantine, aged six years, Grand Admiral of the Empire, and presented him as such to the fleet assembled at Cronstadt.

Donna Maria was expected in England, having been invited to Windsor by the King. She was at Havre at the last dates, and according to a paper of that place "the Duke of Leuchtenberg had repaired thither, incognito, for the purpose of meeting his sister, the Duchess of Braganza, and the Queen Donna Maria. Intimation of his being there having been received by the Sub-Prefect, an order was sent to the Duke to the effect that he should quit Havre immediately."

From Carthagena, via Martinique.—The French ship *Minerva*, Capt. L'Ami, arrived at Charleston on the 6th instant, in 16 days from Fort Royal, (Martinique.) Capt. L informs the editors of the Courier that a French government schr. arrived at Fort Royal the day the *Minerva* left, in 30 days from Carthagena, bringing information that a disturbance had occurred in that place, in which most of the English residents there had been massacred. The French Consul having interfered to quell the riot, was taken up and confined in the jail, and afterwards killed by the rioters. The Governor of Martinique had despatched two French frigates for the purpose of protecting the foreign inhabitants of Carthagena.

Liberia.—To illustrate the business of the Colony, we make the following extracts from a late No. of the Liberia Herald:

Commission Business.—The subscriber respectfully informs his friends and the public, that he has built on Water street, No. 320, a large Stone Ware House, convenient to the water's edge, where he intends carrying on the Commission Business; and is now ready to accept of any vessel or vessels, whose masters wish to have their business done.—The said house is quite convenient for storing Tobacco, Flour, Beef, Pork, Lard, Butter, Molasses, Sugar, &c. And on the upper floor, Dry Goods and Crockery Ware. And withal is a licensed Auctioneer. Henry S. Nelson.

Monrovia, August 5th, 1833.

Here is an other, and we are glad to see no *ardent spirit* mentioned either in this or the price current:

Dailey & Russwurm offer for sale the cargo of the schooner William Tompkins, from Norfolk, Virginia, consisting of

23 hhds. dark leaf Tobacco, of superior quality;
350 bbls. Provisions, consisting of Mess Prime Pork, Beef, do. Mackerel, No. 2; Shad and Herrings and Lard;
125 bbls. Superfine Family Flour;
199 Springfield Hams;
425 kegs assorted Nails;
200 boxes Yellow Soap.

Monrovia, Liberia, August 5th, 1833.

The Herald always contains notices like the following:

The fast sailing coppered and copper-fastened schr. Rebecca, Hall, master, will sail alternately from this port for Windward and Leeward, and will take freight on moderate terms; for which, or passage, apply to Dailey & Russwurm.

One more must suffice:

General Orders.—Commanders of the different Corps of Monrovia, will cause their companies to parade on the Saturday preceding the second Monday in August, in Broad street, precisely at 9 o'clock, A. M.

N. B. A battalion Court Martial will be held at the Town House, at 10 o'clock, A. M. on the second Monday in August. By order of the Major.

Jacob W. Prout, A. M. F. L.

The Keeper of the Colonial Hotel advertises, we see, that one of his rooms is used for a Dry Goods Store; and that he has two Blacksmith's Forges and a Cabinet-making business, in operation, besides acting as merchant, tailor, lumber merchant, and licensed auctioneer. Well done, Randolph Cooper! Enough certainly for one man.—[Boston Journal.]

MISCELLANY.

Travelling in the olden Time.—The following curious advertisement is extracted from the Caledonian Mercury of July 10, 1721: "Whereas it has been reported that the stage coach (from Edinburgh) to London hath not performed in nine days, as was promised in their bills. Now this may satisfie, that the badness of the weather and roads beat down the horses of a sudden, which could not be prevented by the undertaker; but for the future will be punctually performed in nine days, at least till Michaelmas; one of the owners being now down to put in fresh horses."

Effects of Electricity on Plants.—Many experiments in electrifying plants have been made by M. Nuneberg and the Abbe Nollet. According to the reports of the former, most of them increased in height, and flourished far beyond others not electrified. Some bulbous roots, he says, which had been frequently electrified, grew eighty-two lines and a half, whilst others of the same species, not electrified, grew only fifty-two lines and two-thirds. But the report of Abbe Nollet is not so favorable; he found that the plants electrified by him made vigorous shoots at first, but he thought the perspiration being, by these means, too much increased, their juices were too quickly dissipated. Hence the plants became gradually weaker, and at length prematurely perished. We yield due credit to both these reports, though they seem in some measure incompatible with each other. It is possible the experiments were made on various plants, at different seasons.—[Horticultural Register.]

A Curiosity.—A citizen of Portsmouth brought to our office yesterday, a silver coin, which he informed us was brought up from a depth of 26 feet below the surface of the earth, in the process of boring for water, on High street. It was about the size of an English shilling, but of an oval shape. Our antiquraian researches being extremely limited, we are unable to identify it with the age or country in which it was coined. The effigies are prominent and distinct, representing on one side a head, having an uncommon elongation of the *occiput*, which supports a rim with five points projecting upwards, perhaps intended for a crown. The profile of the face might pass for that of Black Hawk, without much help of the imagination, and the chin as well as the head is bare of hair. The inscription around theedge is too indistinct to make any thing of it. The letters, however, are Roman, and the most legible part of the inscription presents this appearance:—MILIPPVS; the rest of the letters are entirely undefinable. On the reverse side is the full length figure of a warrior, or hunter, bare-headed, habited in a sort of tunic, holding a spear, the point of which is elevated to a level with his head, while the handle is grasped by the right hand which is thrown considerably back for the purpose, and the left leg advanced, with a small curvature of the knee, as if coming to the charge. This figure is also surrounded by an inscription, but the letters are entirely illegible. How this memento of remote time found its way to the spot whence it was thus accidentally brought to light, it is not for us to say; the probability that it came there through the agency of any of the present race of inhabitants of the country, is destroyed by the fact that no excavation has ever been made within the town to so great a depth, since it was first settled. We must therefore suppose that it is a relic of a people inhabiting this country of whom the world now knows nothing, or that it was swept there by the alluvial formation of the earth, where it was found, among the wrecks and treasures which in all time have been "in the deep bosom of the ocean buried." We leave it to the geologist and the numismatologists to solve the problem."

In this age, and this country of universal elementary instruction, new facilities at once, and new inducements are constantly given for the extensive diffusion of good knowledge. Much of practical science, physical, moral and political, to be useful at all must be made the common property of the people.—It must, as it were, be taken up into the system of the body politic, and mix with its whole circulation. The means are at our command. Through well-devised common school systems, through our numerous and extensively circulating journals, through conversation, domestic instruction, public discourses, lectures, books of education, and popular reading, the laws and conclusions of science, and not unfrequently its processes and reasonings, may be made familiar to all classes. Those doctrines and opinions that in the last generation were admitted slowly and cautiously, perhaps doubtingly, by some few learned speculative men on the conviction of their understandings, in opposition to the strong bias of their early impressions, can now be made elementary propositions, familiar maxims, household words to a whole people. This is to be accomplished almost entirely by the agency of well-instructed men scattered thro'-out society, who according to their several stations, occupations and capacities, act as conductors of knowledge, leading it off from its accumulated stores and spreading and pouring it through the general mind of ten thousand channels.

Here let me remark, that the fitness of well-governed colleges and higher seminaries of learning to promote this most important end, is the strong and unanswerable republican argument for their patronage in a free state. They are incorporated and endowed, not for the sake of the comparatively very few who can be taught there, but in the design and hope, that those few may be the instruments of good and the means of instruction to many, either by example or by actual teaching, writing or speaking; thus making the most finished education, if not in itself, yet in its effects, uses and consequences, as broad and general as the light of heaven. Should that intent prove abortive, should these instructions minister only to learned pride, conducing nothing to the common good or the elevation and illumination of the public mind—if they become mere reservoirs of stagnant learning, instead of fresh springing fountains of living knowledge, they will disappoint the hopes of their truest friends and are no longer worthy the countenance and aid of a free people.—[Verplanck's Discourse at the Annual Commencement of Geneva College.]

Travelling in England a century ago.—In December, 1703, Charles III., King of Spain, slept at Petworth on his way from Portsmouth to Windsor, and Prince George of Denmark went to meet him there by desire of the Queen. The distance from Windsor to Petworth is about forty miles. In the relation of the journey given by one of the Prince's atttendants, he states—"We set out at six in the morning by torch light, to go to Petworth. and did not get out of the coaches (save only when we were overturned or stuck fast in the mire) till we arrived at our journey's end. 'Twas a hard service for the Prince to sit fourteen hours in the coach without eating any thing, and passing through the worst way I ever saw in my life. We were thrown but once indeed in going, but our coach which was the leading one, and his Highness's body coach would have suffered very much, if the nimble boors of Sussex had not frequently poised it, or supported it with their shoulders from Godalming almost to Petworth, and the nearer we approached the Duke's house the more inaccessible it seemed to be. The last 9 miles of the way cost us 6 hours time to conquer them; and indeed we had never done it, if our good master had not several times lent us a pair of horses out of his own coach, whereby we were enabled to trace out the way for him." Afterwards writing of his departure on the following day from Petworth to Guildford, and thence to Windsor, he says—"I saw him (the Prince) no more, till I found him at supper at Windsor; for there we were overturned (as we had been once before the same morning) and broke our coach; my lord Delaware had the same fate, and so had several others."—[Annals of Queen Anne, Vol. ii, Appendix No. 3.

Superiority of the Right Hand over the Left.—In speaking of the arteries which go to the hand, it may be expected that we should touch on a subject, which has been formerly a good deal discussed, whether the properties of the right hand, in comparison with those of the left, depend on the course of the arteries to it. It is affirmed that the trunk of the artery going to the right arm, passes off from the heart so as to admit the blood directly and more forcibly into the small vessels of the arm. This is assigning a cause which is unequal to the effect, and presenting altogether, too confined a view of the subject; it is a participation in the common error of seeking in the mechanism the cause of phenomena which have a deeper source. For the conveniences of life, and to make us prompt and dexterous, it is pretty evident that there ought to be no hesitation which hand is to be used, or which foot is to be put forward; nor is there, in fact, any such indecision. Is this taught, or have we this readiness given to us by nature? It must be observed, at the same time, that there is a distinction in the whole right side of the body, and that the left side is not only the weaker, in regard to muscular strength, but also in its vital or constitutional properties. The developement of the organs of action and motion is greatest upon the right side, as may at any time be ascertained by measurement, or the testimony of the tailor or shoemaker; certainly, this superiority may be said to result from the more frequent exertion of the right hand; but the peculiarity extends to the constitution also; and disease attacks the left extremities more frequently than the right. In opera dancers, we may see that the most difficult feats are performed by the right foot. But their preparatory exercises better evince the natural weakness of the left limb, since these performers are made to give double practice to it, in order to avoid awkwardness in the public exhibition; for if these exercises be neglected, an ungraceful preference will be given to the right side. In walking behind a person, it is very seldom that we see an equalized motion of the body; and if we look to the left foot, we shall find that the tread is not so firm upon it, that the toe is not so much turned out as in the right, and that a greater push is made with it. From the peculiar form of the woman, and the elasticity of her step resulting more from the motion of her ancle than of the haunches, the defect of the left foot when it exists is more apparent in her gait. No boy hops upon his left foot, unless he be left handed. The horseman puts the left foot in the stirrup and springs from the right. We think we may conclude, that every thing being adapted in the conveniences of life to the right hand, as for example the direction of the worm of the screw or of the cutting end of the augur, is not arbitrary, but is related to a natural endowment of the body. He who is left handed is most sensible to the advantages of this adaptation, from the opening of the parlor door to the opening of the penknife. On the whole, the preference of the right hand is not the effect of habit, but is a natural provision, and is bestowed for a very obvious purpose: and the property does not depend on the peculiar distribution of the arteries of the arm—but the preference is given to the right foot, as well as to the right hand.—[Bell's Bridgewater Treatise.]

An English Country Gentleman.—Sir Harry Hargrave is an English gentleman; his conscience is scrupulous to the value of a pin's head; he is benevolent, hospitable, and generous. Sir Harry Hargrave is never dishonest nor inhumane, except for the best possible reasons. He has, for instance, a worthless younger son; by dint of interest with the Bishop of ——, he got the scapegrace a most beautiful living: the new rector has twenty thousand souls to take care of; and Sir Harry well knows, that so long as pointers and billiard-tables are to be met with, young Hopeful will never bestow even a thought on his own. Sir Harry Hargrave, you say, is an excellent gentleman; yet he moves heaven and earth to get his son a most respectable situation, for which he knows the rogue to be wholy unfit. Exactly so; Sir Harry Hargrave applauds himself for it: he calls it—*taking care of his family.* Sir Harry Hargrave gives away one hundred and two loaves every winter to the poor; it is well to let the laborer have a loaf of bread now and then for nothing: would it not be as well, Sir Harry, to let him have the power always to have bread cheap? Bread cheap! what are you saying? Sir Harry thinks of his rents, and considers you a revolutionist for the question. But Sir Harry Hargrave, you answer, is a humane man, and charitable to the poor. Is this conscientious? My dear sir, to be sure; he considers it his first duty to take care of the landed interest.—Sir Harry Hargrave's butler has robbed him; the good gentleman has not the heart to proceed against the rascal; he merely discharges him.—What an excellent heart he must have! So he has; yet last year he committed fifteen poachers to jail.—Strange inconsistency! Not at all:—*what becomes of the country gentleman if his game is not properly protected?* Sir Harry Hargrave is a man of the strictest integrity; his word is his bond—he might say with one of the Fathers, "that he would not tell you a lie to gain heaven by it;" yet Sir Harry Hargrave has six times in his life paid five thousand pounds to three hundred electors in Cornwall, whom he knew would all take the bribery oath, that they had not received a shilling from him. He would not tell a lie, you say; yet he makes three hundred men forswear themselves! Precisely so; and when you attempt to touch this system of perjury, he opposes you to his last gasp: but he is not to be blamed for this—*he is only attached to the venerable constitution of his fore-fathers!*—Sir Harry Hargrave is an accomplished man, and an excellent scholar; yet he is one of the most ignorant persons you ever met with. His mind is full of the most absolete errors; a very Monmouth-street of threadbare prejudices; if a truth gleam for a moment upon him, it discomposes all his habits of thought, like a stray sunbeam on a cave full of bats. He enjoys the highest possible character among his friends for wisdom and virtue: he is considered the most consistent of human beings: consistent!—yes, to his party.—[Bulwer's England and the English.]

Every Nerve appropriated to its Function.—From this law of our nature, that certain ideas originate in the mind in consequence of the operation of corresponding nerves, it follows—that one organ of sense can never become the substitute for another, so as to excite in the mind the same idea. When an individual is deprived of the organs of sight, no power of attention, or continued effort of the will, or exercise of the other senses, can make him enjoy the class of sensations which is lost. The sense of touch may be increased in an exquisite degree; but were it true, as has been asserted, that individuals can discover colours by the touch, it could only be by feeling a change upon the surface of the stuff and not by any perception of the colour. It has been my painful duty to attend on persons who have pretended blindness: and that they could see with their fingers. But I have ever found that by a deviation from truth in the first instance, they have been entangled in a tissue of deceit; and have at last been forced into admissions which demonstrated their folly and weak inventions. I have had pity for such patients when they have been the subjects of nervous disorders which have produced extraordinary sensibility in their organs—such as a power of hearing much beyond our common experience; for it has attracted high interest and admiration, and has gradually led them to pretend to powers greater than they actually possessed. In such cases it is difficult to distinguish the symptoms of disease, from the pretended gifts which are boasted of. Experiment proves, what is suggested by Anatomy, that not only the organs are appropriated to particular classes of sensations, but that the nerves, intermediate between the brain and the outward organs, are respectively capable of receiving no other sensations but such as are adapted to their particular organs. Every impression on the nerve of the eye, or of the ear, or on the nerve of smelling, or of taste, excites only ideas of vision, of hearing, of smelling or of tasting; not solely because the extremities of these nerves, individually, are suited to external impressions, but because the nerves are, through their whole course and wherever they are irritated, capable of exciting in the mind the idea to which they are appropriate, and no other. A blow, an impulse quite unlike that for which the organs of the senses are provided, will excite them all in their several ways; the eyes will flash fire, while there is noise in the ears. An officer received a musket-ball which went through the bones of his face—in describing his sensations, he said that he felt as if there had been a flash of lightning, accompanied with a sound like the shutting of the door of St. Paul's. On this circumstance, of every nerve being appropriated to its function, depend the false sensations which accompany morbid irritation of them from internal causes, when there is in reality nothing presented extrenally; such as flashes of light, ringing of the ears, and bitter taste or offensive smells. These sensations are caused, through the excitement of the respective nerves of sense, by derangement of some internal organ, and most frequently of the stomach.—[Bell's Bridgewater Treatise.]

M. Cuvier and the Barber.—During he absencet of the valet, M. Cuvier sent for a barber to shave him. The operation being finished, he offered to to pay the requisite sum; but the enlightened operator, who happened to be a Gascon, bowed, and positively refused the money, saying, with his comic accent, "he was too much honored, by having shaved tho greatest man of the age, to accept any recompense." Hardly suppressing a smile, M. Cuvier felt bound to give him the honor to its full extent, and engaged to perform his function every day while he remained in London. It is scarcely necessary to add, that the barber, in a short time, felt it a still higher duty to consult prudence rather than empty honor, and pocketed the amount due for the exercise of his calling.—[Mrs. Lee's Memoirs of Baron Cuvier.

Advice to the Young.—I would advise you to read with a pen in your hand, and enter in a little book short hints of what you find that is curious, or that may be useful; for this will be the best method of imprinting such particulars in your memory, where they will be ready, either for practice on some future occasion, if they are matters of utility, or at least to adorn and improve your conversation, if they are rather points of curiosity. And as many of the terms of science are such as you cannot have met with in your common reading, and may therefore be unacquainted with, I think it would be well for you to have a good dictionary at hand to consult immediately when you meet with a word you do not comprehend the precise meaning of. This may at first seem troublesome and interrupting; but it is a trouble that will daily diminish, as you will daily find less and less occasion for your dictionary, as you become more acquainted with the terms; and in the mean time you will read with more satisfaction, because with more understanding.—[Franklin's Familiar Letters.]

The Heroic Standard.—Admiral Lord Duncan, who was six feet four inches in height, and perfectly proportioned, was considered one of the finest figures, as a man, in the naval service; his father and grand father are both of them reported to have exceeded that height, enjoying, at the same time, every possible natural advantage of symmetry and just proportion.—[Sharpe's Peerage.]

Last Moments of Cuvier.—At two o'clock in the day, the accelerated respiration proved that only a part of the lungs was in action; and the physicians, willing to try every thing, proposed to cauterize the vertebræ of the neck: the question, Had he a right to die? rendered him obedient to their wishes; but he was spared this bodily torture, and leeches and cupping were all to which they had recourse. During the application of the former, M. Cuvier observed, with the greatest simplicity, *that it was he who had discovered that leeches possessed red blood*, alluding to one of his Memoirs, written in Normandy. The consummate master spoke of science for the last time, by recalling one of the first steps of the young naturalist. He had predicted that the last cupping would hasten his departure; and when raised from the posture necessary for this operation, he asked for a glass of lemonade, with which to moisten his mouth. After this attempt at refreshment, he gave the rest to his daughter-in-law to drink, saying, it was very delightful to see those he loved still able to swallow. His respiration became more and more rapid; he raised his head, and then letting it fall, as if in meditation, he resigned his great soul to its Creator without a struggle. Those who entered afterwards would have thought that the beautiful old man seated in his arm chair, by the fireplace, was asleep; and would have walked softly across the room for fear of disturbing him; so little did that calm and noble countenance, that peaceful and benevolent mouth, indicate that death had laid his icy hand upon them; but they had only to turn to the despairing looks, the heart rending grief, or the mute anguish of those around, to be convinced that all human efforts are unavailing, when Heaven recalls its own.—[Mrs. Lee's Memoirs of Baron Cuvier.]

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR,
35 Wall street.

New-York, August 14, 1833.

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Levelling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 ly Germant. and Norrist. Railroad

STEPHENSON,
Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part o the New-York and Harlæm Railroad, now in operation.
J 25 tf

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,
Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio
Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those Instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 8th to the 14th day of October 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
October 8..	6 a. m.	64	29.90	SE—SSE	fr'h—strong	SSE	rain —rain scuds from SSE
	10	66	29.83	S by E	..—mod.	..	..
	2 p. m.	67	29.75	S—SW—WSW	mod.—fresh	S NW	fair
	6	62	29.77	WSW	strong	SW	..
	10	57	29.75	..	..		cloudy
" 9..	6 a. m.	60	29.84	SW—WNW	mod.—fresh	NW b W—brisk	fair
	10	66	29.91	NNW	fresh	..	..
	2 p. m.	69	29.91	NW	moderate	..	..
	6	66	29.91	NNW	light		clear
	10	61	29.97		calm		..
" 10..	6 a. m.	58	29.91	—SW	..—faint	SW	fair
	10	64	29.90	SW	light	..	..
	2 p. m.	69	29.80	WSW	mod.—fresh	WSW	..
	6	66	29.80	WNW	frh-str-gale	W—	cloudy and squally —fair
	10	49	29.98	..	gale—mod.		fair
" 11..	6 a. m.	42	30.18	..	moderate	—NW	clear —fair
	10	48	30.21	..	..		..
	2 p. m.	52	30.20	NW—WNW	..	—W by S	.. —fair —haze from W by S
	6	55	30.20	NNW	light	..	hazy
	10	51	30.21		calm		cloudy
" 12..	6 a. m.	48	30.14	ENE—E—SE	light	SW by W	..
	10	51	30.15	ESE & SE	mod.—fresh	SW SE	..
	2 p. m.	63	29.93	SE—ESE	strong	—	.. —rainy
	6	60	29.79	ESE	—gale		rain
	10	63	29.57		..—		..
" 13..	6 a. m.	55	29.30	NNW	—gale	WNW slow NNW brisk	rainy —cloudy —rain —cloudy
	10	55	29.40	WNW—W	..	WNW NW	fair --cloudy —fair
	2 p. m.	56	29.50	W by S—WSW	strong—fr'h	WNW	fair —cloudy
	6	58	29.62	WSW	fr'h—strong	W by N	cloudy —fair
	10	52	29.72	WNW	strong		fair
" 14..	6 a. m.	49	29.94	WSW—WNW	mod.—fresh	..—NNW	..
	10	55	30.03	WNW	fresh	..	..
	2 p. m.	58	30.04	..	..	..	..
	6	56	30.08	..	light		.. —haze at SW
	10	52	30.15		calm		.. do. do. N

Average temperature of the week ending Monday, October 14, 55°.00.

AS IT SHOULD BE. *Our List of Subscribers.*—While almost every paper with which we exchange is complaining of the slackness of their subscribers, and while so many paragraphs are in circulation respecting the same subject, we cannot forbear bestowing a compliment upon our subscribers for their promptness—a promptness so unusual in newspaper affairs, and therefore so unexpected.

Our list of subscribers during the whole period of the publication of this paper has averaged 1200, and there is now due us from these subscribers but FIFTY DOLLARS! We challenge any newspaper establishment in the United States to produce so punctual a list; and so far as we are concerned, we are inclined to form a very favorable opinion of that class of individuals who subscribe for newspapers.

There are a few however who owe us for last year, and did they know how their names appear by the side of these punctual men, they would immediately send us the amount of their subscription, and remove from our minds those unpleasant feelings with which we always regard the man who neglects, year after year, to ☞ "*pay the printers.*"—[N. H. Bap. Reg.]

☞ The same cannot be said of all readers of newspapers.—[ED. R. R. J.]

STATISTICS OF TENNESSEE.

Population.

Whites - - - - - - -	535,744
Slaves - - - - - - -	141,603
Free colored persons, - - - -	4,555
Total, - - - - - -	681,902

Square Miles.

According to the most accurate estimate, there are about 42,000 square miles—equal to 26,880,000 acres.

Exports.

The annual exports can only be estimated by reference to particular sections of the country, and their average there.

Cotton 120,000 bales - - - -	$4,000,000
Corn and live stock - - - -	1,000,000
Tobacco 4,000 hogsheads, - -	120,000
Iron and castings, - - - -	800,000
Other articles not enumerated, - -	200,000
	$6,120,000

Public Debt.

The state is entirely free from public debt, other than that created for stock in the Union Bank—$500,000.

Annual Expenditures.

The annual expenses of the Government amount to $71,243.

Revenue.

The amount and sources of the state revenue are as follows to wit:

Tax on Land - - - - -	$23,190
" " Town lots - - - -	2,096
" " White polls - - - -	8,880
" " Black polls - - - -	12,384
" " Stud horses - - - -	3,372
" " Pleasure carriages - - -	1,091
" " Law proceedings - - -	8,769
" " Conveyances - - - -	1,008
" " Taverns - - - -	1,110
" " Merchants - - - -	31,563
Total - - - - - - -	$93,389

Public Lands.

The estimated value of the public lands to which the Indian title is not extinguished is $500,000.

MARRIAGES.

On Thursday morning, by the Rev. Dr. Krebs, Mr. GEORGE W. SUMNER, to Miss MARY BROWN, daughter of Charles Porter, Esq. all of this city.

Last evening, by the Rev. Mr. Bayard, Mr. L. LINCOLN, of New Orleans, to Miss CATHARINE ANN RUTGERS, second daughter of Henry Bedlow, Esq. of this city.

This morning, by the Rev. Wm. Jackson, EDWARD W. TIERS, of Philadelphia, to CHRISTIANA T., daughter of Foster Nostrand, of this city.

Last evening by the Rev. Dr. Brownlee, MR. DAVID WEBB to Miss MARY L. PRIMROSE, all of this city.

On Tuesday morning, the 15th inst. at Chatham, Columbia County, ROBERT W. MURPHY, Esq. of Rensselaerville, Albany, county, to Miss ROMELIA, daughter of Wm. Wheeler, Esq. of the former place.

DEATHS.

This morning, after a short but painful illness, MARY ANN, aged six years and five months, only daughter of Henry J. Egan Painter.

On Saturday morning, after a short illness, Capt. CHARLES HALL.

At Washington, N. C. on the 9th inst., of the billious fever, WM. R. SWIFT, Esq., a native of Virginia, and formerly of this city, in the 46th year of his age.

At New Orleans, on the 23d ult. Mrs. ANN HALY, wife of Dr. DAZET SENAC.

At the same place, on the 28th, of yellow fever, DANIEL GILBERT, formerly of Portland, Me. aged about 26.

At the same place, on the 25th, of the prevailing epidemic, ALBERT D. OVERTON, a native of Southhold, New York.

At the same place, on the 27th, JAMES Y. WALTON, a citizen of New York, but for a long time a resident of this city.

At Alexandria, (La.) on the 17th ult. J. C. JACKSON, merchant, late of New Orleans.

At New-Orleans, on the 22d ult. of the prevailing epidemic, Mr. G. PHILLIPPI, a native of Italy.; yesterday afternoon, Mr. JOSEPH GOLDSMITH; on the 18th ult. of the prevailing epidemic, Mrs. D. H. CURTIS, aged 26 years, a native of Boston, (Mass.); on the 19th ult. of yellow fever, Mr. J. B. FULLER, a native of Rock Hill, (Conn.) aged about 21 years.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

WINCHESTER AND POTOMAC RAILROAD.

☞ TO CONTRACTORS FOR EXCAVATION AND MASONRY.—Proposals will be received by the undersigned at Taylor's Hotel, in Winchester, Va. *on the 7th day of November next*, for the Grading and Masonry of *Twenty seven miles* of the Winchester and Potomac Railroad, commencing near the town of Winchester, and ending at the Shenandoah River. The above work will be divided into sections of convenient length; and plots and profiles of the line, and drawings of the requisite constructions, will be exhibited at Winchester, for one week previous to the letting.

Proposals will be received at the same time and place, for delivering, on the line of the Railroad, *Four hundred thousand lineal feet* of Heart Yellow Pine or White Oak Rails, the dimensions of the rails to be five inches wide, by nine inches deep, and in lengths of fifteen and twenty feet.

Any further information in relation to the above work will be given on application, verbally or by letter, to William H. Morell, Principal Assistant Engineer, Winchester, Va. or to the Assistant Engineers on the line.

MONCURE ROBINSON, C. E.

Sept. 27th, 1833. o5 1t7.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15. 1833. A29tf RM&F

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1½ do. ½ do.
800 do. 2 do. ½ do.
800 do. 2½ do. ½ do.
soon expected.

Flat Bars in lengths of 14 to 15 feet counter sunk holes, end-cut at an angle of 45 degrees with splicing plates, nails to suit

250 do. of Edge Rails of 36 lbs per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. o73meowr

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersunk heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1931.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling houses and buildings of all kinds devised or built in New York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

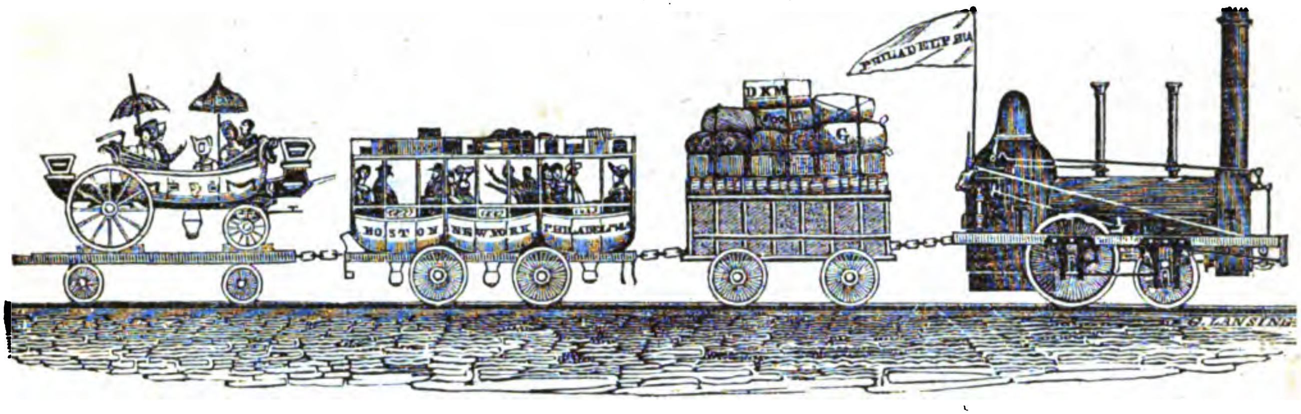
SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10 000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North [illegible]th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 R J M M & F



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, OCTOBER 26, 1833. [VOLUME II.—No. 43.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, OCTOBER 25, 1833.

☞ In the Journal of the 5th inst. it was stated that the title page and list of contents for the three first parts, or *half* volumes, would be forwarded to subscribers in the course of the *then* ensuing week—they have been unavoidaly delayed, but will now be forwarded in a few days, as they are nearly printed.

BALTIMORE AND OHIO RAILROAD.—We have received and read with much pleasure the *Seventh* Annual Report of the President of the above named road, as published in the Baltimore papers, which we intended to publish in this number of the Journal, but on reading it we find it refers to interesting documents, which ought also to be published with the report, and, therefore, we shall delay its publication for a short time, in the hope that some of our Baltimore friends will furnish us with the report and documents in pamphlet form. In the mean time, however, we would observe that the work on the road between the Point of Rocks and Harper's Ferry is progressing, and that it is believed the road will be completed in the course of the ensuing year as far as the latter place, and be there connected with the Winchester railroad—a work, by the by, which will not long terminate at Winchester.

CHICAGO.—We have had the pleasure of a conversation with Mr. Frederick Stahl, of the firm of Johnson & Stahl, of this place, who returned from Chicago on Tuesday last. He informs us that he ordered goods from New-York, which were shipped on the 10th, and arrived at Chicago on the 30th August. The charges for transportation from New-York to Chicago, including commissions and storage, is only one dollar sixty-three cents per hundred pounds. Insurance ¾ per cent. in the fall, and ½ per cent at other seasons of the year. The country from Dixon's ferry, on Rock River, to Chicago, is smooth and level, and with little improvement, an excellent road may be made. An ox team could make a trip from thence to Galena, with great ease, in ten days. Thus we see, that merchandize can be brought from New-York to Galena in thirty days, and at an expense merely nominal.

Mr. Stahl left Chicago on the 19th inst. The commissioners appointed to treat with the Potawatomies were there, and Indians to the number of 5 or 6000 had assembled. Several *talks* had been held with them by the commissioners, in which the Indians manifested a very great disinclination to sell their land. A host of Indian traders were there, who, it was understood, were creditors of the Indians to large amounts, and who would exert all their influence to prevent the consummation of any treaty, till their claims were secured.

The above is from the *Galenian* of 27th September last, which came to hand on the 24th instant. It is another among the many proofs of the vast importance of *internal improvements* to this country. It shows, by actual demonstration, the value of canals. The writer of this recollects the period when, in 1810, 23 years since, it cost *ten dollars per hundred* to transport merchandise from New-York to Buffalo. This statement shows a very different result. Goods carried to Chicago—more than *three* times the distance—in one third of the time, and for one *sixth* of the cost! Such are the results of internal improvements by canals. What, then, will they be when the country is intersected by railroads? In point of *time*, at least, the improvement will be in an equal ratio, if not in other respects. The completion of the New-York and Erie Railroad, and a Railroad across Michigan, to the mouth of the St. Josephs, will enable merchants to land goods at Chicago in *seven days*—and this will be done in a *little* over seven years.

We understand (says the Miner's Journal) that an experiment was made a few days since on an inclined plane of the Danville and Pottsville Railroad, on the Broad mountain, to ascertain its practical operation; the length of the plane being 800 feet, and perpendicular height 200 feet. The ascending car, which was raised by means of a descending one, passed up in the short space of ninety seconds, and without any thing to interrupt the smoothness of its ascent. It is understood that water power will be made use of on these inclined planes, which is attended with far less expense than that which is incident to steam machinery.

SUSQUEHANNA AND DELAWARE RAILROAD.—A meeting of the stockholders was held on the 1st inst. at Stroudsburg, in Northampton county, for the purpose of organizing the Company **HENRY W. DRINKER**, Esq. was duly elected President of the Company for the ensuing year—**WILLIAM HENRY**, Treasurer—and **JOHN JORDAN**, Secretary. The names of the Managers we have not learned. A more judicious choice of officers, probably, could not have been made.—[Montrose Herald.]

To the Editor of the American Railroad Journal:

SIR,—I beg leave, through your valuable Journal, to suggest what I think would be a valuable improvement of the application of horse power to propelling railroad cars. Let the horse, or horses, be put on a moveable platform, (like that in the starch manufactory in Dutch street,) which shall roll on two shafts of say 8 inches diameter, which shall be fixed in railroad wheels, of 32 inches diameter; thus for every three miles the horse moves the platform under his feet, the car will be propelled twelve miles on the railroad. The advantage gained by this arrangement will be, that the power of the horse will be applied in such a manner as to move the car with any given rapidity, far beyond the motion of a horse. It is obvious, too, that when a horse moves rapidly, his strength is expended in procuring the velocity of his own movement—or, to speak more scientifically, in overcoming the inertia of his own body; he exerts more force, therefore, in the draught, when his motion is slow, say 3 to 4 miles per hour. By increasing the difference between the size of the shaft and the wheels, a very great velocity may be procured with a slow steady draught of the horse. The wheels should be fixed firmly on the ends of the shafts, through the centre of which a strong iron rod should be passed, the ends of which should move in an iron bar, placed fore and aft, to keep the shafts at the proper distance from each other. Would not this make a very simple *horse locomotive*, sufficiently well adapted to the purpose to supercede steam?

Yours, &c. SPEED.

The Undulating Railway. By Junius Redivivus. [From the London Mechanics' Magazine.]

Sir,—Since I last wrote to you I have seen Mr. Badnall's treatise on railway improvements; but I must confess I see therein no statement which tends to shake my incredulity on the subject of hill and valley locomotion. I still prefer the level, and doubt not of its being the most economical railway. In the way of argument I have nothing to add to my former letters on the subject. I did, indeed, wish to ask one or two questions, which I had intended to put when I read your review, and the extract, stating that the moving power of the experimental carriage was a steel spring coiled round a barrel; but I have since found that a writer in the Magazine edited by the Messrs. Cobbett has forestalled me. It is by him stated that the experiments were unfair; that in the case of both the level and the curve, the carriage was traversed backwards along the whole line, and that on the curved line the distance traversed was considerably greater than on the horizontal line, consequently that the spring was wound up to a greater amount of tension. He states further his belief, that if the carriage were wound up on the level road, and then placed in motion on the curve, that it would stop half way from want of power. Whether this statement be correct or not I cannot pronounce, not having seen the trials, but the winding up of a spring is assuredly a matter of considerable importance, when we consider that half a turn of the barrel, when nearly wound up gives more power than several turns at the commencement.

Mr. Badnall says, p. 74, "In allusion to the comparative difference in the speed between the two curved railways, in the preceding statement, and in the statement at p. 67, I confess myself in difficulty." At p. 77 he says, "The advantage gained over a common horizontal railway will be in proportion to the length and depth of descent." Now, supposing the moving power to be a coiled spring, it is quite clear that the tension would increase, and consequently the power would increase, in proportion to the number of turns, and in a compound ratio. If this be the case, the "difficulty" will be solved without accounting for it by the "vibration."

From the letter of Mr. Stephenson, quoted in Mr. Badnall's book, I take the following extract:

"This sort of force (*periphugal force*) perhaps not being thoroughly understood, you will allow me to compare it to a man on horseback, riding at full speed, and the animal stopping himself with all the power he is master of; we should in such a case naturally expect to see the rider thrown forward, taking along with him both bridle and stirrups."

With all deference to the opinion of Mr. Stephenson, I beg to remark that I have been for some years in the habit of studying the laws of "forces," in this very species of involuntary experiment. I have seen numerous riders thus shaken out of their saddles—technically called "purchasing an estate"—and with nearly the result he has described: but invariably their future progress was arrested by friction, both on levels and up hill, the momentum being absorbed by the material on which the falling body impinged, and sometimes so rapidly that it dragged life along with it. Down hill, it is true, the momentum has occasionally been of considerable avail, unless a thicket or patch of aloes, or spiry larch-thistle, happened to intervene as a recipient. Even thus I suspect the "periphugal force" would impinge upon and be absorbed by the upward ascent of an undulating railroad.

At page 84 Mr. Badnall talks of having given a *limited* power to his spring, winding it up ten feet and six feet. Why was this small power selected? The experiment seems on too small a scale to justify any reliance on the result. I will state an experiment, which, if it give a result in favor of undulation, when accurately tried, I shall think that there is more in Mr. Badnall's scheme "than is dreamt of in my philosophy."

Make two railroads side by side, with the ends and beginnings parallel. Let one be an horizontal road, say two hundred feet in length. Let the other be increased in actual length, by means of any undulating form Mr. Badnall may choose till it measures two hundred and twenty-five or fifty feet. Then let a barrel spring be adapted to a carriage, so that, when traversed backwards on the horizontal road, it may just have power enough to reach the extremity again Then take the carriage, thus wound up, and place it on the undulating road, and if it reach the extremity of that also, I shall be ready to acknowledge the triumph of Mr. Badnall's *principle*. But, even then, unless it perform something more, there will be no gain in point of economy, but, on the contrary, a considerable loss, by the extra expense of material consumed in the road. And here I leave the matter for the present.

I remain, yours, &c.
Junius Redivivus.

P. S.—Illness, and the pressure of occupation have, hitherto prevented me from answering "R."

The Undulating Railway. By S. D. [From the London Mechanics' Magazine.]

Sir,—If you examine the author's account of his invention as exhibited in your extracts, you will find that in paragraph 3, he says, "that throughout the ascent the pressure upon the rails, and consequently the amount of friction, is precisely the same as it was down the descent A B, viz., as much less than it was on the horizontal line E A as the line C D to D C." Now, surely the amount of friction is proportional to the lines representing the pressure upon the rails, which are C P and C G, not C D and D C. But even with this understanding, let us see if the inference be correct.

In paragraph 5 we find it stated, "that although the disposable power of gravity in opposition to pressure is only as C D to C P, yet this is no criterion of the extent of advantage gained in speed; in fact, C D may as properly be stated to represent the saving in friction."

If C D may be stated to represent the saving in friction, throughout the whole descent, it may also be stated to represent an augmentation of friction upon the whole ascent; so that C P being the measure of the former, C P + C D will be that of the latter quantity. With this in mind, let us see what the author says farther on, that if "the power employed upon the ascending part of the undulation were only just sufficient to overcome the friction and resistance of atmosphere, the carriage would naturally, as proved by the action of the pendulum, rise the ascent B E in the precise time it occupied in traversing from A to B."

Now, on the horizontal railway the friction is represented by the C G, but upon the ascent of the undulating railway by C P + C D, which being greater than the other, it would oppose more force to the progress of the carriage, and it would require more power to overcome it.

In thus examining the author's explanation I am led to think that the amount of friction is not less on the undulating than on the horizontal railway.

I am, sir, your obedient servant,
S. D.

May 20.

The Great North Road in England. [From the Monthly Supplement of the Penny Magazine.]

(Continued from page 661.)

The first notice which has been discovered of the collection of a toll for the repair of roads in England occurs in the year 1346, in the reign of Edward III. In that year it was ordered that tolls should be exacted for two years to come, from all carriages passing along Holborn, Gray's Inn lane, and the highway called Charing, "which roads," says the commission, "are, by the frequent passage of carts, wains, and horses, to and from London, become so miry and deep as to be almost impassable."

As for the country roads, little or no attention seems to have been paid to them till towards the middle of the sixteenth century. In the course of the reign of Henry VIII. four statutes connected with this subject were passed: two for altering certain roads in the Weald of Kent, and in Sussex; a third for mending a lane near the city of Chester; and a fourth for the repair of bridges. The first general act for keeping the roads in repair was passed in 1555, in the reign of Mary. It imposed that duty upon the parishes, and was followed by many others to the same effect in the reigns of Elizabeth and James I. The first toll-bar was erected in 1663, on the northern road leading through Hertfordshire, Cambridgeshire, and Huntingdonshire: "which road," says the act, "was then become very bad, by means of the great loads of barley, malt, &c. brought weekly to Ware in waggons and carts, and from thence conveyed by water to London." Three toll-gates were erected, one for each of the above-named counties; and it is said that the people were so prejudiced against the innovation, that they rose in a mob and destroyed them.

Coaches are said to have been first introduced into England in 1580, by the Earl of Arundel, and by the commencement of the next century they had become common in London. They were brought to Edinburgh in the suite of the English ambassador in 1598. The historians of that city tell us, that coaches for the use of the public generally were established there in 1610. Hackney coaches were first introduced in London in 1625.

As yet there was but little intercourse between these two capitals. In London, Scotland and Edinburgh were considered as foreign parts. In 1635 a proclamation was issued by Charles I. to the effect, that, "whereas to this time there hath been no certain intercourse between the kingdoms of England and Scotland, his majesty now commands his postmaster of England for foreign parts to settle a running post or two, to run night and day between Edinburgh and London." It was a considerable time after the commencement of the last century before there was more than one despatch of letters in the week from London to Scotland. In the year 1763, the London coach set off from Edinburgh only once in the month, and was from 12 to 16 days on the road. The vehicle which accomplished this adventurous achievement was at that time the only stage-coach in the northern capital, except two which ran to the neighboring port of Leith. A journey to or from Edinburgh was in those days a doubtful and hazardous expedition—something like setting out in quest of the north-west passage. It is said, that, in Scotland, when a person determined upon attempting the achievement, he used, with the laudable prudence of that country, to make his will before setting out.

The change that has since taken place is immense. The journey between London and Edinburgh is now performed by the mail-coach, at all seasons and in all weathers, in little more than forty-three hours and a half. The person who undertakes it exposes himself to scarcely any more danger than he does when he walks along the street in which he lives. Even in Scotland, a man seldom now thinks of making his will merely because he is about to visit London. These changes, and the countless others of which they are examples or indications, are due to the existence of a good road between the two capitals. This road, more than the compact of the year 1707, is the true union of the kingdoms.

Within the last thirty years this Great North Road, as it is commonly called, has been extended to the remotest extremity of the island—to a point still farther beyond Edinburgh (at least by the line taken) than Edinburgh is distant from London. This latter portion especially, and also parts of that extending to the south of Edinburgh, have recently undergone some material alterations and improvements. Those that have been effected within the last three years alone are well fitted to raise the admiration of all who are qualified to appreciate their importance. They afford an evidence which is extremely gratifying, of the exertions that continue to be made in order to uphold and extend one of the chief foundations of our national prosperity and greatness. We have been fortunate enough to obtain very complete accounts of the principal of these improvements, in most instances, from persons having access to the best sources of information; and abstracts of these we now propose to lay before our readers, interspersed with such explanations as may convey a full and correct view of the whole course of this great highway,—the longest continued line of road in the United Kingdom.

Improvements in the North.—So greatly does the northern portion of our island incline or lean over to the west, that Edinburgh, while it is about 320 miles to the north of London, is also above 100 miles to the west of it—although the two capitals stand at about equal distances from the east coast. Edinburgh, on the east coast of Great Britain, is, in fact, rather farther west than Liverpool, which stands on the west coast. What is called the Great North Road from London, therefore, diverges considerably from a line drawn due north. The wide level country which generally prevails as far as to the heart of Yorkshire enables it to pursue up to that point a course nearly perfectly straight. The first formidable obstacle, indeed, which it meets with to prevent it from following the shortest line to the Scottish metropolis, is interposed by the Chevoit hills, which form the north-west boundary of Northumberland. These hills, at their northern extremity, approach so close to the sea as to leave only a pass of a few miles broad, through which the road at this part of its course can be carried. Hitherto the town of Berwick, which is on the coast, and at a short distance beyond the termination of the Chevoit range, has been assumed as the point which should determine the direction of the first part of the road between the two capitals. This has made the deflection of the line to the west less than it otherwise would have been: for Berwick, although far west of London, is still considerably to the east of Edinburgh.

The direction of the southern portion of this road, then, may be considered as necessarily regulated, not by the relative positions of London and Edinburgh, but of London and Berwick, or another point but a few miles to the westward of the latter town. The route followed by the mail at present, in fact, is very nearly the shortest line between London and Berwick, subject merely to such slight deviations as are required in order to make it touch certain great towns. The length of this portion of the road, which passes through Huntingdon, Stamford, Doncaster, York, Darlington, Durham, and Newcastle, is 342 miles; the whole distance from London to Edinburgh being 399.

The first improvements which it falls within the plan of the present article to notice are those which have been recently made on the northern portion of this line of road between London and Berwick. We shall begin by merely adverting to the magnificent approaches which now lead to the town of Durham, the elevated situation of which formerly rendered it of such difficult access. The new entrances, which have in a great degree overcome the obstacles presented by the nature of the ground, are excellent specimens of engineering skill, and do honor to the local trusts. They would probably, however, have remained unexecuted but for the stimulus given to these bodies by a committee of the House of Commons, which had under its consideration the defective state of the communication between London and Edinburgh. We may here also mention, as having originated in the recommendations of the same committee, the handsome new bridge over the North Tyne at Morpeth, constructed by Mr. Telford, after the model of the bridge of Neuilly, near Paris.

But the most important improvements in this quarter, and those to which we would particularly direct attention, are the alterations which have recently been effected, or are in progress of execution, on the portion of the road to Edinburgh immediately beyond Morpeth. Here the Chevoit hills run almost parallel to the coast, to which they at the same time approach so closely, that what we may call their roots stretch across the intervening space in the shape of so many successive elevations, while the hollows between are occupied by rivers more or less considerable, all having a direction at right angles to the line of the road. This extreme inequality of surface has hitherto, as already intimated, forced the road close upon the sea: but even while thus retiring as far as possible from the mountains, it has still not been able to avoid a remarkable steep ridge called Birnside Moor. The gentlemen of Northumberland, however, have at last, aided by the great exertions of Sir John Marjoribanks, of Leeds, effected the union of several of the local trusts into one, and thereby enabled themselves to raise the sum of £12,000, which they are now in the course of expending in carrying the road through a series of vallies lying farther to the west, in place of this elevated moorland. The whole of this improvement will be completed during the present year; and although much still remains to be done to make the road what it ought to be in the more immediate vicinity of Morpeth, the alteration effected here will deserve to be accounted one of the most valuable works of public utility which have been recently accomplished in these islands.

The road, following the new direction thus given to it, will now leave Berwick to the right, and, instead of running along the coast, as it does at present, by Dunbar, and thence turning around in a due west direction by Haddington, will proceed by Wooler and Coldstream in very nearly a straight line to Edinburgh. The saving by this route we believe, will be above 10 miles, the distance from Edinburgh to Morpeth being reduced from 104 miles to about 93¼. It is only lately, however, that the road by Coldstream, which passes through a very hilly country, has been brought to such a condition as that the mail could travel on it. The exertions of the gentlemen of Berwickshire and Midlothian, by which this important object has been at last accomplished, rather preceded those of the Northumberland trustees to which we have just adverted, their operations having commenced in January, 1828.

From a report now before us, by the clerks of the Berwickshire trust, it appears that the improvements effected on what is called the Greenlaw Turnpike Road embrace the reduction of numerous severe pulls of from one foot in six to one foot in twelve, occurring between Deanborn, the northern extremity of the trust, and Coldstream, to gentle ascents of from one foot in twenty-five to one in forty; besides the repair of the bridge over the Blackadder, at the east end of Greenlaw, and of that over the Tweed, at the east end of Coldstream. Including £2,100 expended on the Coldstream bridge, the whole cost of these improvements, up to the 8th of March last, had amounted only to £23,145. Of the adjoining portion of the road in the Edinburgh direction, which is under the care of the trustees of the Dalkeith district, a line of about eight miles, extending from the south-east boundary of the county of Mid Lothian to the north end of Fordel Bank, near Dalkeith, has within the same period been shortened, and the passage on it rendered much more safe and easy, by altering the course of the road in some places, by cutting down and banking over some difficult and dangerous passes, and by building several new bridges.

The principal bridges are the bridge over Craustown Dean, and the bridge over the Tyne, at the north end of the village of Ford Pathhead, called the Lothian bridge. Craustown Dean bridge is forty-six feet in height, and consists of three semi-circular arches of seventeen feet span: the whole building is of ashler, and the piers being only three feet in thickness, the bridge has a very light appearance.

Lothian bridge is eighty-two feet in height, and consists of five semi-circular arches of fifty feet span, surmounted by ten segments arches of fifty-four feet span and eight feet of rise. The piers are eight feet thick by twenty-eight feet broad, and hollow in the centre, as are also the abutments.

The whole building is of ashler, thereby presenting a happy combination of durability and lightness, and adding much to the ornament of the adjoining grounds. The embankments at the ends of the bridges are planted up with evergreens.

Of the embankments, that at Cotterburn is of the length of five hundred yards, and will contain 200,000 cubical yards of earth. The extreme depth of cutting in the line of the road will be thirty-two feet. Besides the general improvement of the line of road, these operations have opened many fine prospects of the neighboring beautifully wooded and highly cultivated country. The expense has amounted to between £20,000 and £30,000, besides a large sum of money which was previously expended on the improvement of that part of the line which is situated between this district and Edinburgh.

The city of Edinburgh stands within two miles of the great arm of the sea called the Frith of Forth, which, at the part immediately north of the Scottish capital, is about seven or eight miles broad. Steamboats and other vessels put across this estuary at all hours from Leith, the port of Edinburgh, and from Newhaven, about a mile to the west of that town, both to Burnt Island, Pettycur, and Kinghorn, which are directly opposite, and to Kirkaldy, Dysart, Leven, Ely, Pittenweem, and Anstruther, which lie farther to the east. The common passage for travellers to the north is from Newhaven, (where there is a chain pier,) to Pettycur. As this passage, however, is subject to be occasionally interrupted, (though since the introduction of steam navigation that is a circumstance which has very rarely happened,) the mail, instead of crossing here, proceeds along the coast of the river to Queensferry, about twelve miles farther west, where the channel is contracted to the width of about a mile and a half. But before leaving Edinburgh we cannot help noticing, although not upon any of the great lines of road leading from that capital, the magnificent bridge, called the Dean bridge, which has lately been thrown across the chasm formed by the river or water of Leith to the north of the city. The reader will find a notice of this structure, which was only finished about the beginning of the last year, in the "Companion to the Almanac" for 1832. This bridge, which has been erected after a design by Mr. Telford, almost at the sole expense of John Learmouth, Esq. (late Lord Provost,) to whose property it forms a communication, consists of two series of four arches each, the one surmounting the other. The span of each of the upper arches is 96 feet, and the road-way passes at the height of more than 120 feet above the level of the water below.

From Queensferry the present route of the mail is directly north by Kinross to Perth, from which point, crossing the Tay by a bridge, it takes its way along the northern banks of that river in an eastern direction to Dundee, and from thence to Arbroath on the coast. The common road, however, from Edinburgh to Dundee, runs in nearly a straight line from Pettycur through the county of Fife, and across the Frith of Tay, which at Dundee is about two miles in breadth. There is on this passage an excellent steamboat of a peculiar construction, the paddles being placed in the middle, as if there were two boats joined, and the form being such that it moves equally well with either end foremost. The distance from Edinburgh to Dundee by this road is not quite 43 miles, whereas, by that which the mail takes, for the sake principally of avoiding the two ferries over the Forth and the Tay, it is not less than 69 miles. From Dundee to Arbroath is 17 miles more, so that the whole distance by this circuitous route from Edinburgh to the latter place is 86 miles, the distance in a straight line being only about 50. In getting from Berwick to Arbroath, again, the mail travels about 143 miles, while a straight line drawn between these two points would not measure 60. The voyage by sea from the one place to the other does not exceed the last mentioned distance.

The road between Edinburgh and Montrose, which is 12 miles to the north of Arbroath, has been constructed at a cost of not less than £100,000, reckoning only the outlay since the commencement of the present century; but as only a small portion of this sum has been expended within the last three or four years, the consideration of the improvements which it has effected does not fall within the scope of our present remarks. We pass on, therefore, to notice the bridge which has just been carried over the South Esk at Montrose. This town stands on the north bank of the river called the South Esk, which here falls into the German ocean; and we cannot better explain its singular situation than by extracting the description given of it in a report made in 1823 by Mr. Buchanan:

"The river South Esk, at Montrose, is remarkable for its broad, depe, and very rapid stream. But the great width of the river, and the current, deep and rapid beyond example indeed in this country, are not owing to the magnitude of the South Esk river itself, but to the singular manner in which the discharge of its waters into the sea is here combined with the action of the tides and the configuration of the adjacent ground.

"The town stands on a gently rising ground, in one of those low sandy flats which occur so frequently on the shores of the German ocean, and which, from their slight elevation above the sea level, and other circumstances, appear to have been once overflowed by the water. It has the German ocean on the east, at the distance of about half a mile, and to the west is a tract of low and level sands, above four square miles in extent and nine miles in circumference, through which the South Esk winds its way to the sea, passing close to the town on its south side. These sands lie below the level of high water, and above the level of low water; and the river opening a communication with the sea, it necessarily happens, that every rising tide rushes up the channel of the river, and inundates the whole of this sandy flat to the west of the town, which is again left uncovered by the reflux of the tide. The channel through which this great body of water is alternately poured in and discharged is suddenly contracted, at the south end of the town, to the breadth of 700 feet at high water, and 400 feet at low spring tides; and in consequence of this the stream rushes in or out with great violence, according as the tide is either flowing or ebbing. This low land, over which, at each return of the tide, are spread the waters of the ocean, after they have made their way through the narrow channel of the South Esk, is called the Basin, which forms a striking object in the scenery of the place, appearing, when the tide is full, a large and beautiful lake, and in a few hours afterwards, when the waters have retired, a desolate and sandy marsh."

Between the basin and the sea, the river is at one place divided into two channels, by a small island called the Inch; but the two streams again unite into one before they arrive at the sea. About thirty years ago, when the road from Edinburgh to Aberdeen was first constructed, a wooden bridge was erected across the most northern of these channels, which is by far the broadest; the other being crossed by a stone bridge of one arch, which is so narrow that, says Mr. Buchanan's report, "it has contracted the channel of the river to at least one-fourth of its original breadth." At the same time the channel of the northern stream had been greatly contracted by the faulty construction of its wooden bridge. The effect of this unnatural confinement of so violent and rapid a stream has been to deepen the channel on the northern side, not less than five or six feet in many parts; so that the original bottom having been carried away, the foundations on which the piers rested were in danger of being undermined. To prevent this result wooden piles were driven in, which served as a sort of wall to repel the current. But, notwithstanding this expedient, the bridge was still found to labor under the incurable defects of its original construction. In particular, the wood was so damaged by the ravages of sea worms, of the genus designated *Oniscus*, that the expense of keeping it in repair was very great. It was accordingly determined a few years ago to remove this wooden structure altogether, and to supply its place by a suspension bridge. Such a bridge has been accordingly erected, after a design by Captain Samuel Brown, of the Royal Navy.

The distance between the towers at the two extremities of this bridge, measured from the centre of each, is 432 feet. The height of each tower is seventy-one feet; namely, twenty-three feet and a half from the foundation to the roadway, forty-four feet from the roadway to the top of the cornice, and three feet and a half forming the entablature. The breadth of each tower, at the termination of the cut-waters, is forty feet and a half, and thirty-nine and a half at the roading. The archway by which each is perforated is sixteen feet in width by eighteen in height. The four counter-abutments for securing the chains are respectively 115 feet distant from the towers, (reckoning from the centre of the tower to the face of the farthest wall of the chambers,) and consist each of an arched chamber, a strong counterfort or abutment, a tunnel, and lying spandrel arch. The width of the bridge is twenty-six feet within the suspending rods. The bars of which the main chains consist, measure eight feet ten inches from centre to centre of the bolt-holes, five inches broad between the shoulders, and one inch thick throughout. All the main links or bars are of the same thickness, except those in the towers, which are a sixteenth of an inch thicker, and of length to suit the curve of the cast iron saddles. Each main suspending chain, of which there are two on each side of the bridge, one over the other, placed one foot apart, consists of four lines of chain bars. The joints of the upper main chains are over the middle of the long bar in the lower chain; and the suspending rods which support the beams on which the roadway is laid, are five feet distant from each other. The chains are of wrought cable iron; the beams are of cast iron, formed with open spaces, twenty-six feet eight inches long, ten inches deep at the neck of the tenons, and one inch thick in every part between the flanges. The whole cost has been a little above £20,000.

To this account we have only to add, that the centre of the arch of the stone bridge which crosses the southern stream has also been taken down, and a revolving drawbridge erected in its stead, by which vessels are allowed to pass and repass. The communication across the South Esk at Montrose, therefore, may now be considered to be as perfect as it can be rendered or desired.

From Montrose the road follows the line of the coast by Bervie and Stonehaven to Aberdeen, a distance of thirty-seven miles. The situation of New Aberdeen is extremely similar to that of Montrose, standing as it does on the north side of the large and rapid river Dee. Until lately, the only bridge across this river was the magnificent old bridge erected by Bishop Elphinstone in the early part of the sixteenth century. Within the last three years' however, a suspension bridge has been erected between the town, and a road made at great expense, to communicate with the old one.

In this bridge the width between the stone piers is 200 feet; the breadth of the roadway is 22 feet, and its height above high water is 18 feet. It is within the recollection of many persons now alive, that the whole of the land at present in cultivation around Aberdeen was one brown heathery moor. Such is still the case with the whole district through which the above mentioned new road has just been completed; but from this operation we may probably date the commencement of a course of improvements, which will ere long transform this hitherto bleak and sterile tract into cultivated and productive fields. And here, while speaking of New-Aberdeen, we cannot help adverting to the small expense, both of money and of time, with which, thanks to steam navigation, a person residing even at so distant a point as London, may now accomplish a visit to this handsome northern city, remarkable for its rapid increase, the industry of its inhabitants, and the fine granite buildings of which it is entirely constructed. The voyage by sea is very little, if any thing, longer than to Edinburgh, and is usually performed by the steamboats in little more than fifty hours.

As New-Aberdeen is situated on the north side of the Dee, so Old Aberdeen stands on the south side of the Don. The Don, until within these few years, was crossed at Old Aberdeen by a very ancient bridge, called the *Brig of Balgownie*. We refer the reader to an interesting passage in Sir Thomas Dick Lauder's volume, entitled "An Account of the Great Floods of August, 1829, in the Province of Moray and adjoining Districts," for some curious particulars regarding this structure.

The new bridge of Don, which was built by Mr. Gibb, after a design by Mr. Telford, is about 520 feet in length, and consists of five arches, each of seventy-five feet span, and twenty-four feet rise. The total expense of the erection was £14,000. The effect of this improvement is to shorten the road by about half a mile, and to avoid three steep hills over which it was formerly carried. This structure, although in an unfinished state when the great flood of 1829 occurred, escaped on that occasion without injury. It was completed towards the end of the following year.

At Aberdeen the mail road leaves the coast, and proceeds across the country in nearly a straight line by Inverury, Huntley, Keith, and Fochabers, to Elgin, the county town of Morayshire. The whole distance from Aberdeen to Elgin is sixty-seven miles. The road is throughout excellent; and notwithstanding that it passes over a great deal of hilly country, is so artfully conducted that hardly a single heavy pull is encountered the whole way. Immediately beyond Fochabers, it is met by the impetuous and formidable river Spey, forming the boundary of the province of Moray, which notwithstanding its northern situation is one of the fairest portions of the island, and one of those in which vegetation is earliest. It used, however, to be in a manner separated and cut off from the rest of the country by this dangerous mountain torrent, until about twenty-five years ago, when a bridge was first built across it at Fochabers. It consisted of four arches, of which two were of ninety-five and two of seventy-five feet span each, the total length of water-way being 340 feet. But this bridge, during the floods of August, 1829, which destroyed or damaged nearly one hundred others, had the two arches next the left bank carried away, of which Sir Thomas Dick Lauder has given a striking account.

Various bridges over the river Findhorn, which bounds Morayshire to the west, and over the stream of the Lossie, on which the town of Elgin stands, were swept away on the same occasion, so that the country was at once cut off from all communication with the surrounding parts. Active measures, however, have since been taken to repair the ruin produced by this visitation, and new bridges have already been erected in the line of the great road over all the three rivers.

The bridge at Elgin over the Lossie, of 80 feet span, is partly of cast metal and partly of timber.

From Elgin the mail proceeds along the coast of the Moray Frith to Inverness, and from thence westward to the termination of that estuary, when it crosses the Beauly Water, and ascends northwards to Dingwall, on the Frith of Cromarty. Pursuing for some time the direction of the northern coast of that Frith, it then arrives at Tain, on the Dornoch Frith, which it crosses by Meikle Ferry; after which the road runs along the coast for seventy miles, till it leaves it at Wick, and cuts across the country to Thurso on the Northern Ocean. This is the farthest point to which the London mail proceeds. Thurso, by the road which has been described, is 783 miles distant from London; and the journey is now accomplished by the mail, all stoppages included, in four days and fifty minutes.

The portion of the road which has just been described from the Beauly Water to Thurso has been constructed and is maintained in repair by the commissioners appointed under the act of parliament for superintending Highland roads and bridges. The works conducted by the parliamentary commissioners from the year 1803, when they commenced their operations, have done more to advance the civilization of the Highlands than all the other attempts of government for that purpose in the course of the preceding century. Speaking of what had been done up to 1817, Mr. Telford, the engineer, asserts, in a statement which will be found quoted at greater length in the "Results of Machinery," chap. vii, that the money then expended "had been the means of advancing the country at least one hundred years." The report made by the commissioners in 1828 (the fourteenth) contains an interesting communication, addressed to the late Lord Colchester, by Mr. Joseph Mitchell, on the improved state of the Highlands since the commencement of the works executed by the commissioners; with an abstract of a few of the statements presented in report which we may fitly conclude the present paper.

So little communication was then wont to be between the northern counties of Scotland and the south, owing to the want of roads, that, until of late years, the counties of Sutherland and Caithness were not required to return jurors to the circuits at Inverness. "Before the commencement of the present century, no public coach, or other regular vehicle of conveyance, existed in the Highlands. It was not till 1806 and 1811 that coaches were regularly established in these directions, being the first that ran on roads in the highlands. Since the completion of the parliamentary works, several others have successively commenced; and during the summer of last year, no less than seven different stage coaches passed daily to and from Inverness, making forty-four coaches arriving at, and the same number departing from, that town in the course of every week. * * * Post-chaises, and other modes of travelling, have, during the same period, increased proportionably; and, instead of five post-chaises, which was the number kept in the town of Inverness about the year 1803, there are now upwards of a dozen, besides two establishments for the hire of gigs and riding horses. * * * The number of private carriages in Inverness and its vicinity has likewise increased remarkably during the last 25 years, and no less than 160 coaches may now be seen attending the Inverness yearly races; whereas, at the commencement of that period, the whole extent of the Highlands could scarcely produce a dozen; and at no very distant date previously, a four-wheeled carriage was an object of wonder and veneration to the inhabitants. In 1715, the first coach or chariot seen in Inverness is said to have been brought by the Earl of Seaforth. In 1760 the first post-chaise was brought to Inverness, and was for a considerable time the only four-wheeled carriage in the district. There are at present four manufactories for carriages at Inverness."

Formerly there were no inns; inns are now built, except in one instance, along the roads constructed by the commissioners, extending in length to upwards of 900 miles. The mails, which used to be carried only on runner's backs, are now sent to all the considerable towns in coaches, and three or four times a week to places off the direct line of road, to which they used to come only once. Finally, agriculture has received a prodigious impulse from these improvements; the value of property has been greatly increased; trade has been promoted; and the general condition of even the poorest of the inhabitants has been ameliorated by numerous accommodations and comforts which were formerly entirely out of their reach.

Steam Carriage.—On Wednesday last, our townsmen, Messrs. Heaton, (brothers,) made another experiment with their steam coach, to ascend the hill at Broomsgrove Lickey, which is a loose sandy surface, so much so, that the wheels of their machine (about fifty hundred weight) carried a bill of sand before them about three inches deep. The hill is about seven hundred yards long, and rises on an average one yard in nine, and in some places one yard in eight, and is declared by eminent surveyors to be the worst piece of road in the kingdom. This hill was mounted by their machine, with a stage coach attached, fifteen hundred weight, and nine persons, in nine minutes, in the presence of about two hundred spectators. They then took up their friends. twenty in number, they had brought from Birmingham, with five in addition, making twenty-five, and proceeded on to Groomsgrove, as far as the Market place; there they turned the machine round, and returned to the Crab Mill Inn, about fifteen miles; this was accomplished in two hours and twenty-two minutes, including all stoppages. Having staid a considerable time at the Crabb Mill Inn, they returned home, calling at the various places on the road where they had before called in the morning, and receiving the congratulation of their friends at having accomplished the greatest undertaking in the history of steam locomotion on the common road. They arrived in Birmingham, bringing with them up Worcester street, an ascent of one yard in twelve, thirty-two persons.—[Birmingham Journal, 2d Sept.]

The Warrenton, N. C. Reporter, in announcing that a railroad meeting had been held in that place, makes the following remarks, from which we are pleased to learn that the Petersburg road has been the means of checking, in some measure, the tide of emigration from the section of country along its route: "The Roanoke and Oxford railroad, when completed, would be of incalculable advantage to this section of country. It would vastly increase the value of property. It would diminish considerably the cost of transportation, and would render many articles marketable which are now not worth the expense and trouble of sending them to market. Proprietors of large landed estates have every inducement to subscribe for stock, even if that stock should not realize extravagant profits, because upon the completion of the road their real estate would probably be doubled in value. They, however, are not the only persons interested in this matter. Every individual in Warren county who makes a bale of cotton, a few bushels of wheat, or indeed any thing of any description for market, would immediately feel the advantages of the railroad. Let no man in this part of the world suppose for a moment that he is not personally interested in the projected improvement. We have been informed by persons entitled to credit, that before the commencement of the Petersburg Railroad, many planters along the route were anxious to remove to the west, but could not dispose of their lands on any terms. Since the railroad has been finished, their land has become valuable: they could now sell it with ease upon liberal terms, but have no disposition to do so. Such are the advantages of this work, that the people alongside of it are contented to remain where they are, although before it commenced they were anxious to emigrate. They are now willing to cultivate and improve their patrimonial estates, and spend their lives within their native Virginia. If commercial auxiliaries dispense these blessings in Virginia, would they be productive of contrary effects in North Carolina? The people of this State cannot adopt such an absurd and ridiculous opinion. We earnestly hope, and confidently believe, that the Petersburg and Roanoke Railroad, the product of the enlightened enterprize of a sister State, will be the great pioneer in the march of southern improvement."—[Petersburg Intel.]

Accident.—On Thursday last, while two men were employed in the mines of Mr. McIntyre, near the West Branch Railroad, an immense body of rock and slate suddenly gave way, and before the miners had time to think of making their escape, the gangway was completely blocked up, and they found themselves buried alive. In this awful situation they remained until three o'clock on Friday morning, at which time, through the unremitted exertions of their friends, who worked without interruption throughout the night, they were taken out in a state of great debility and exhaustion, but strong enough to warrant the hopes of speedy recovery. Great praise is due to those who exerted themselves with such persevering industry in behalf of these individuals, by which alone their miraculous preservation was effected. A horse which was in the mines was killed, being crushed to atoms by the overwhelming mass.—[Miner's Journal.]

Canal Tolls.—We learn from the Albany Argus that the amount of Tolls received upon the State Canals in the month of September, was $203,685,82; being an increase of $52,634, as compared with the receipts of the same month last year. Receipts of the year to 30th September, $998,176,20; exceeding the receipts of last year, down to the same date, more than $210,000.

[*From the Charleston Courier of 9th October.*]

Another Accident on the Railroad.—We have the unpleasant duty of recording another accident upon the Rail Road, from fire, which occurred yesterday about 2 o'clock, at Cypress Swamp, about five miles above Summerville. The Locomotive had five freight and two passage cars attached; at the place above named, the cotton in the last of the freight cars was discovered to be on fire—as soon as it was possible to do so, the passage cars, and the freight car which had taken fire, were detached from the train, but there being no water near, it was found impossible to extinguish the flames, and the car with its contents, consisting of 21 bales of cotton, were entirely consumed. The Road also took fire, and several lengths were burnt. A rope was attached to the Locomotive, and passed to the first passage car, by means of which it was drawn through the fire; and the passengers were thus enabled to reach the city, after a detention of two or three hours.

We are informed by passengers, that fire had caught previously in the cotton on one of the freight cars, but, being discovered in time, was extinguished without any damage; and that another time, the car in which the passengers were seated took fire. It is stated that the canvass used for covering the cotton is too small, and not well secured. The ends of the bales of cotton project out, and from the velocity with which the cars proceed, the canvass flies up, and exposes the cotton to the sparks which are emitted from the Locomotive. This should be looked to by those who have the management of the Road, as we understand that the cotton would be effectually protected from fire if the canvass completely covered it.

The passengers all agree in stating that every possible exertion was made by those who were employed in the management of the cars.

We regret to learn that Mr. Benneville Brobst, at the Plymouth Locks, on the Schuylkill Canal, was drowned a few days since. The body has not yet been found.—[Miner's Journal.]

CRYPTOGRAPHY: the art of transmitting secret information by means of writing, which is intended to be illegible, except by the person for whom it is destined. The ancients sometimes shaved the head of a slave, and wrote upon the skin with some indelible coloring matter, and then sent him, after his hair had grown again, to the place of his destination. This is not, however, properly secret writing, but only a concealment of writing. Another sort, which corresponds better with the name, is the following, used by the ancients. They took a small stick and wound around it bark, or papyrus, upon which they wrote. The bark was then unrolled and sent to the correspondent, who was furnished with a stick of the same size. He wound the bark again, round this, and thus was enabled to read what had been written.

This mode of concealment is evidently very imperfect. Cryptography properly consists in writing with signs, which are legible only to him for whom the writing is intended, or who has a key or explanation of the signs. The most simple method is to choose for every letter of the alphabet some sign, or only another letter. But this sort of cryptography (*chiffre*) is also easy to be deciphered without a key. Hence many illusions are used. No separation is made between the words, or signs of no meaning are inserted among those of real meaning. Various keys, likewise, are used, according to rules before agreed upon. By this means, the decyphering of the writing becomes difficult for a third person, not initiated; but it is likewise extremely troublesome for the correspondents themselves; and a slight mistake often makes it illegible, even by them.

Another mode of communicating intelligence secretly, viz. to agree upon some printed book, and mark the words out, is also troublesome and not at all safe. The method of concealing the words which are to convey the information intended in matter of a very different character, in a long letter, which the correspondent is enabled to read, by applying a paper to it, with holes corresponding to the places of the significant words, is attended with many disadvantages: the paper may be lost; the repetition of certain words may lead to discovery; and the difficulty of connecting the important with the unimportant matter, so as to give the whole the appearance of an ordinary letter, is considerable. If this is effected, however, this mode has the advantage of concealing the fact that any secrecy is intended.

Writing with sympathetic ink, or milk, lemon juice, &c. is unsafe, because the agents to make the letters visible are too generally known. Hence the *chiffre quarre*, or *chiffre indechiffrable*, so called, has come very much into use, because it is easily applied, difficult to be decyphered, and the key may be preserved in the memory merely, and easily changed. It consists of a table, in which the letters of the alphabet, or any other signs agreed upon, are arranged under one another, thus:

z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a
b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b
c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c
d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d
e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e
f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f
g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g
h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h
i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i
k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k
l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l
m	n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m
n	o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n
o	p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o
p	q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p
q	r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q
r	s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r
s	t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s
t	u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t
u	v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u
v	w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v
w	x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w
x	y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x
y	z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y
z	a	b	c	d	e	f	g	h	i	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z

Any word is now taken for a key: *Paris*, for example. This is a short word, and, for the sake of secrecy, it would be well to choose for the key some one or more words less striking. Suppose we wish to write in this cypher, with this key, the phrase "We lost a battle;" we must write *Paris* over the phrase, repeating it as often as is necessary, thus:

ParisParisPar
Welostabattle

We now take, as a cypher for *w*, the letter which we find in the square opposite *w*, in the left marginal column, and under *p* on the top, which is *m*. Instead of *e*, we take the letter opposite *e*, and under *a*, which is *f*; for *l*, the letter opposite *l*, and under *r*, and so on.

Proceeding thus, we should obtain the following series of letters:

mfcxlibtkmimw

The person who receives the epistle writes the key over the letters: as,

ParisParisPar
mfcxlibtkmimw

He now goes down in the perpendicular line, at the top of which is *p*, until he meets *m*, opposite to which, in the left marginal column, he finds *w*. Next, going in the line of *a*, down to *f*, he finds on the left *e*. In the same way, *r* gives *l*, *i* gives *o*, and so on. Or you may reverse the process: begin with *p*, in the left marginal column, and look along horizontally till you find *m*, over which, in the top line, you will find *w*. It is easily seen that the same letter is not always designated by the same cypher; thus, *e* and *a* occur twice in the phrase selected, and they are designated respectively by the cyphers *f* and *w*, *b* and *k*. Thus the possibility of finding out the secret writing is almost excluded. The key may be changed from time to time, and a different key may be used with each correspondent. The utmost accuracy is necessary, because one character, accidentally omitted, changes the whole cypher. The correspondent, however, may ascertain this with considerable trouble.—[British Cyclopædia.]

THE ANGLO-CHINESE KALENDAR FOR THE YEAR OF THE CHRISTIAN ERA 1833.—We have before us a copy of a publication, with the above title, bearing to be printed in China, at the Albion press, and to be on sale "at Markwick and Lane's, Canton, and Macoa;" "where also," it is added, "may be obtained, A Companion to the Anglo-Chinese Kalendar for 1832, containing various commercial and other tables, many of which continue applicable to the present time." The price of the Companion is one Spanish dollar, that of the Kalendar half as much, or 50 cents. We regard this production as a very great curiosity, and as one of the most interesting signs of the times. The printing press may be said to take a decided part in the regulation of human affairs, when it begins to throw off newspapers and almanacs. Up to this point literature is the luxury of a few; thenceforth it becomes a necessary of life to all, and exercises the power appertaining to that character. The present is, over all the globe, the age of this its new and more mighty manifestation. It is some years since a newspaper, printed partly in the native tongue of the tribe, was established among the Cherokees of North America. There is more than one newspaper now published in the popular dialect of India. Even the Turks now have their printed newspaper; and here we have an Almanac and Companion printed in China, where we believe an English newspaper has also been for some time published. This country, indeed, is the native land of the art of printing, which was practised here many centuries before it was known in Europe; but yet, all circumstances considered, the appearance of an English Almanac from the press of Canton is perhaps more remarkable than any of the other novelties we have mentioned.

The Anglo-Chinese Kalendar commences by some introductory remarks on the Chinese year, which is luni-solar—that is to say, is regulated by the motions of the moon, but is accommodated also, in a rude and imperfect way, to that of the sun, by the insertion, or intercalation, as it is called, of an occasional thirteenth month, when requisite. The year 1833 of our reckoning corresponds to the Chinese year *Kwei-sze*, or the thirtieth of the 75th cycle of sixty, which commenced on the 20th of February, and is the thirteenth of the reigning Emperor Taoukwang. The Chinese week consists, like our own, of seven days, one of which is kept as a holiday or sabbath.

The present Kalendar is drawn up according to the European form, and contains, besides notices of anniversaries, a list of festivals and remarkable days, comprehending most of those observed either in China or Christendom. Some notes are appended, explanatory of the Chinese festivals, from which we shall give one or two extracts. The following is the note on the festival of Spring, or the Leih-chun term-day, being the 15th day of the 12th moon, which this year fell on the 4th of February: "This day, the period of the sun's reaching the 15th degree in Aquarius, is one of the chief days of the Chinese Kalendar, and is celebrated with great pomp, as well by the government as by the people. In every capital city there are made, at this period, two clay images, of a man and a buffalo. The day previous to the festival, the chefoo, or chief city-magistrate, goes out to *ying chun*, meet spring; on which occasion children are carried about on men's shoulders, each vying with his neighbor in the gorgeousness and fancifulness of the children's dresses. The following day, being the day of the festival, the chefoo again appears as priest of spring, in which capacity he is, for the day, the first man in the province. Hence the chief officers do not move from home on this day. After the chefoo has struck the buffalo with a whip two or three times, in token of commencing the labors of agriculture, the populace then stone the image till they break it in pieces. The festivities continue ten days."

The 20th of February, as already mentioned, was this year the new-year's day of the Chinese. It is called by them Yuen tan, or "the first morning." "The period of new year," says the Kalendar, "is almost the only time of universal holiday in China. Other times and seasons are regarded only by a few, or by particular classes, but the new year is accompanied with a general cessation of business. The officer, the merchant, and the laborer, all equally desist from work, and zealously engage in visiting and feasting,—occasionally making offerings at the temples of those deities whose peculiar aid they wish to implore. Government offices are closed for about ten days before, and twenty days after new year; during which period none but very important business is transacted. On the last evening of the old year, all tradesmen's bills and small debts are paid. This is perhaps the reason why it is called *choo scih*, the evening of dismissal."

We may add the account of the festival of dragon boats, called in Chinese Twan-woo or Twang-yang, and also Teen-chung, falling this year on the 22d of June. "On this day many people race backwards and forwards, in long narrow boats, which being variously painted and ornamented, so as to resemble dragons, are called *lung chuen*, 'dragon boats.' From the narrowness of the boats, and the number of persons on board, there being sometimes from sixty to eighty oars, or rather paddles, it frequently happens that several of the boats break in two; so that the festivities seldom conclude without loss of several lives. Tradesmen's accounts are cleared off at this period."

The Chinese, we find, have their immortal Francis Moore as well as ourselves. The 5th of July, being the eighteenth day of the fifth moon, is the birth-day of the astronomer Chang, of whom the following account is given: "This individual, who formerly superintended the making of the Chinese Kalendar, is supposed still to exist, and to predict eclipses, and other astronomical, as well as astrological, phenomena."

The most interesting part of this Kalendar, however, is its account of the Chinese seasons, given in the form of notices at the head of each month. It may be presumed that, prepared as they are in the country to which they refer, the correctness of these descriptions may be depended on; and we shall therefore give the whole.

"*January.*—The weather during the month of January is dry, cold, and bracing; differing but little, if at all, from the two preceding months, November and December. The wind blows generally from the north, occasionally inclining to north-east or north-west. Any change to south causes considerable variation in the temperature of the atmosphere.

"*February.*—During this month the thermometer continues low; but the dry, bracing cold of the three preceding months is changed for a damp and chilly atmosphere. The number of fine days is much diminished, and cloudy or foggy days are of more frequent recurrence in February and March than in any other months. At Macao the fog is often so dense as to render objects invisible at a very few yards distance.

"*March.*—The weather in the month of March is also damp and foggy, but the temperature of the atmosphere becomes considerably warmer. To preserve things from damp, it is requisite to continue the use of fires and closed rooms, which the heat of the atmosphere renders very unpleasant. From this month the thermometer increases in height until July and August, when the heat is at its maximum.

"*April.*—The thick fogs which begin to disappear towards the close of March are in April seldom if ever seen. The atmosphere, however, continues damp, and rainy days are not unfrequent. At the same time the thermometer gradually rises, the nearer approach of the sun rendering its heat more perceptible. In this and the following summer months, south-easterly winds generally prevail.

"*May.*—In this month summer is fully set in, and the heat, particularly in Canton, is often oppressive; the more so from the closeness of the atmosphere, the winds being usually light and variable. This is the most rainy month in the year, averaging fifteen days and a half of heavy rain; cloudy days without rain are, however, of unfrequent occurrence; and one half of the month averages fair sunny weather.

"*June.*—June is also a very wet month, though, on an average, the number of rainy days is less than in the other summer months. The thermometer in this month rises several degrees higher than in May, and falls but little at night. It is this circumstance, chiefly, which occasions the exhaustion often felt in this country from the heat of summer.

"*July.*—This month is the hottest in the year, the thermometer averaging eighty-eight in the shade at noon, both at Canton and Macao. It is likewise subject to frequent heavy showers of rain; and, as is also the month of August, to storms of thunder and lightning. The winds blow almost unintermittingly from south-east or south.

"*August.*—In this month the heat is generally as oppressive, and often more so, than in July, although the thermometer usually stands lower. Towards the close of the month the summer begins to break up, the wind occasionally veering from south-east to north and north-west. Typhons seldom occur earlier than this month, or later than the end of September.

"*September.*—In this month the monsoon is entirely broken up, and northerly winds begin to blow, but with little alleviation of heat. This is the period most exposed to the description of hurricanes called Typhons, the range of which extends southwards, over about one half of the Chinese sea, but not far northward. They are most severe in the Gulf of Tonquin.

"*October.*—Northerly winds prevail during the month of October, occasionally veering to the north-east or north-west; but the temperature of the atmosphere is neither so cold nor so dry as in the following months. Neither does the northerly wind blow so constantly, a few days of southerly wind frequently intervening. The winter usually sets in with three or four days of drizzling rain.

"*November.*—This month and the following are the pleasantest in the year, to the feelings, at least, of persons from more northern climes. Though the thermometer is not often below forty, and seldom so low as thirty, the cold of the Chinese winter is often intense. Ice sometimes forms about one-eighth of an inch thick, but this is usually in December or January.

"*December.*—The months of December and January are remarkably free from rain; the average fall in each month being under one inch, and the average number of rainy days being only three and a half. On the whole, the climate of Canton, but more especially of Macao, may be considered very superior to that of most other places situated between the tropics."

The following table presents a view of the range of the thermometer at Canton:

	Average, Noon.	Average, Night.	Highest.	Lowest.
January . . .	64	50	74	29
February . .	57	49	78	38
March . . .	72	60	82	44
April . . .	77	68	86	55
May	78	72	88	64
June	85	79	90	74
July	88	81	94	79
August . . .	85	78	90	75
September . .	83	76	88	70
October . . .	77	69	85	57
November . .	67	57	80	40
December . .	62	52	70	45

[Penny Magazine: C. Knight, London.]

Babbage on the Economy of Manufactures.

[Continued from page 665.]

ON COMBINATIONS OF MASTERS AGAINST THE PUBLIC.

291. A species of combination occasionally takes place amongst manufacturers against persons having patents; and these combinations are always injurious to the public, as well as unjust to the inventors. Some years since, a gentleman invented a machine by which modellings and carvings were cut in mahogany and other fine woods. The machine resembled, in some measure, the drilling apparatus employed in ornamental lathes; it produced beautiful work, at a very moderate expense; but the cabinet-makers met together, and combined against it, and the patent has consequently never been *worked*. A similar fate awaited a machine for cutting veneers by means of a species of knife. In this instance, the wood could be cut thinner than by the circular saw, and no waste of it was incurred; but "the trade" set themselves against it, and, after a heavy expense, it was given up.

Similar examples of combination seem not to be unfrequent, as appears by the Report of the Committee of the House of Commons on Patents for Inventions, June, 1829. See the evidence of Mr. Holdsworth.

292. There occurs another kind of combination against the public, with which it is difficult to deal. It usually ends in a monopoly, and the public are then left to the discretion of the monopolists not to charge them above the "*growling point*"—that is, *not to make them pay so much as to induce them actually to combine against the imposition*. This occurs when two companies supply water or gas to consumers by means of pipes laid down under the pavement in the streets of cities: it may possibly occur also in docks, canals, railroads, &c. and in other cases where the capital required is very large, and the competition very limited. If water or gas companies combine, the public immediately loses all the advantages of competition; and it has generally happened, that, at the end of a period during which they have undersold each other, the several companies have agreed to divide the whole district supplied into two or more portions, and that each company has removed its pipes from all streets but those in its own portion of the district. This removal causes great injury to the pavement, and when the pressure of increased rates induces a new company to start, the same inconvenience is again produced. Perhaps one remedy to evils of this kind might be, when a charter is granted to such companies, to restrict, to a certain amount, the rate of profit to be divided on the shares, and to direct that any profits beyond shall accumulate for the repayment of the original capital. This has been done in several late acts of Parliament, establishing companies. The maximum rate of profit allowed ought to be liberal, to compensate for the risk, and the public ought to have auditors on their part, and the accounts should be annually published, for the purpose of preventing the object of the limitations from being defeated. It must, however, be admitted that this is an interference with capital, which, if allowed, should be examined with great circumspection in each individual case, until some general principle is established on well admitted grounds.

293. An instrument, called a gas-meter, which ascertains the quantity of gas used by each consumer, has been introduced, and furnishes a satisfactory mode of determining the payments to be made by individuals to the gas companies. An instrument somewhat similar in its nature might be contrived for the sale of water; but, in that case, a difficulty is to be apprehended, arising from the diminished quantity which would then run to waste: the streams of water running through the sewers in London are largely supplied from this source; and if the quantity of water flowing through them were diminished, the drainage of the metropolis might be injuriously affected.

294. A powerful combination has long existed amongst the coal owners in the north of England, by which the public has suffered in the payment of increased price. The late examination of evidence before a Committee of the House of Commons has explained its mode of operation, and the Committee have recommended that, for the present, the sale of coal should be left to the competition of other districts.

295. A powerful combination of another kind exists at this moment to a great extent, and operates upon the price of the very pages which are now communicating information respecting it. A subject so interesting to every reader, and still more so to every manufacturer of the article which the reader consumes, deserves an attentive examination.

We have previously shown, (at page 44,) the component parts of the expense of each copy of the present work; and we have seen that the total amount of its cost of production, exclusive of any payment to the auther for his labor, is 2*s*. 3¼*d*.

Another fact, with which the reader is more practically familiar, is that he has paid, or is to pay, his bookseller six shillings for the volume. Let us now examine into the distribution of these six shillings, and then, having the facts of the case before us, we shall be better able to judge of the merits of the combination, and to explain its effects.

Distribution of the profits on a six-shilling book:

	Buys at.		Sells at.		Profit on capital expended.
	s.	*d.*	*s.*	*d.*	
No. I. The *Publisher*, who accounts to the author for every copy received,	3	10	4	2	10 pr ct.
No. II. *Bookseller*, who retails to the public, -	4	2	6	0	44 "
——. Or, - - -	4	6	6	0	33⅓ "

No. I, the Publisher, is a bookseller: he is, in fact, the author's agent. His duties are to receive and take charge of the stock, for which he supplies warehouse room; to advise the author about the times and methods of advertising; and to insert the advertisements. As he publishes other books, he will advertise lists of those sold by himself; and thus, by combining many in one advertisement, diminish the expense to each of his principals. He pays the author only for the books actually sold, consequently he makes no outlay of capital, except that which he pays for advertisements; but he is answerable for any bad debts he may make in disposing of them. His charge is usually ten per cent. on the returns.

No. II is the Bookseller, who retails the work to the public. On the publication of a new book, the publisher sends round to the trade to receive subscriptions from them for any number of copies not less than two. These copies are usually charged to the subscribers, on an average, at about four or five per cent. less than the wholesale price of the book: in the present case they pay 4*s*. 2*d*. for each copy. After the day of publication, the price charged by the publisher to the booksellers is 4*s*. 6*d*. Different publishers offer different terms to the subscriber; and it is usual, after intervals of about six months, for the publisher again to open a subscription list, so that if the work be one for which there is a steady demand, the trade avail themselves of these opportunities of purchasing, at the reduced rate, enough to supply their probable demand.

296. The volume thus purchased of the publisher at 4*s*. 2*d*. or 4*s*. 6*d*. is retailed by the bookseller to the public at 6*s*. In the one case he makes a profit of forty-four, in the other of thirty-three per cent. Even the smaller of these two rates of profit, on the capital employed, certainly appears to be too large. It sometimes happens that when a purchaser inquires for a book, the retail dealer sends across the street to the wholesale agent, and receives for this trifling service one-fourth part of the money the purchaser pays; and perhaps the retail dealer also takes six months credit for the price which the volume actually cost him. It is stated that all retail booksellers allow to their customers a discount of ten per cent. upon orders above 20*s*., and that, therefore, the nominal profit of forty-four or thirty-three per cent. is considerably reduced. If this is the case, it may fairly be inquired why the price of £2, for example, is printed upon the back of a book, when every bookseller is ready to sell it at £1 16*s*.; and why those who are unacquainted with that circumstance should be made to pay more than others who are better informed! Another reason has been assigned for the great profit charged upon books, namely, that the purchasers take long credit. This is probably a fact; and, admitting it, no reasonable person can object to a proportionate increase of price. But, certainly, it is equally clear that gentlemen, who do pay ready money, should not be charged the same price as those who defer their payments to a very remote period. In the country, there is a greater appearance of reason for a considerable allowance between the retail dealer and the public, because the profit of the country bookseller will be diminished by the expense of the conveyance of the books from London; but, even in this case, it appears to be too large when compared with the rate of interest which capital produces in other trades.

297. That the profit in retailing books is really too large is proved by two circumstances: First, That the same nominal rate of profit has existed in the bookselling trade for a long series of years, notwithstanding the great fluctuations in the rate of profit on capital invested in every other business. Secondly, That, until very lately, a multitude of booksellers in all parts of London were willing to be satisfied with a much smaller profit, and to sell, for ready money, or at short credit, to persons of undoubted character, at a profit of only ten per cent., and, in some instances, even at a still smaller per centage, instead of that of twenty-five per cent. on the published prices. It cannot be pretended that this high rate of profit is necessary to cover the risk of the bookseller having some copies left on his shelves, because he need not buy of the publisher a single copy more than he has orders for; and even if he do purchase more at the subscription price, he proves, by that very purchase, that he himself does not estimate that risk at above from four to eight per cent. It should also be remarked, that the publisher is generally a retail, as well as a wholesale, bookseller; and that, besides the profit which he realizes on every copy sold by him in his capacity of agent, he is allowed to charge the author as if every copy had been subscribed for at 4*s*. 2*d*., and of course he receives the same profit as the rest of the trade for those retailed in his shop.

298. Now, a certain number of the London booksellers have combined together. One of their objects is to prevent any bookseller from selling a book at less than ten per cent. under the published price; and in order to enforce this principle, they refuse to sell books, except at the publishing price, to any bookseller who declines signing their agreement. By degrees, many were prevailed upon to join this combination; and the effect of the exclusion it inflicted, left the small capitalist no option between signing or having his business destroyed. Ultimately, nearly the whole trade, comprising about two thousand four hundred persons, have signed the agreement.

As might be naturally expected from an agreement so injurious to many of the parties to it, disputes have arisen: several booksellers have been placed under the ban of the combination, who allege that they have not violated its rules, and who accuse the opposite party of using spies, &c. to entrap them.

299. The origin of this combination has been explained by Mr. Pickering, of Chancery lane, himself a publisher, in a printed statement, entitled "*Booksellers' Monopoly*."

The following list of booksellers has been copied from that printed at the head of each of the cases published by Mr. Pickering, of the booksellers who form the committee for conducting this combination: J. Allen, 7 Leadenhall street—J. Arch, 61 Cornhill—R. Baldwin, 47 Paternoster row—J. Booth—J. Duncan, 37 Paternoster row—J. Hatchard, Piccadilly—R. Marshall, Stationers' Court—J. Murray, Albemarle street—O. Rees, 39 Paternoster row—J. M. Richardson, 23 Cornhill—J. Rivington, St. Paul's Church-yard—E. Wilson, Royal Exchange.

300. In whatever manner the profits are divided between the publisher and the retail bookseller, the fact remains, that the reader has paid for the volume in his hands 6*s*., and that the author will receive only 3*s*. 10*d*., out of which latter sum the expense of printing the volume must be paid: so that in passing through two hands this book has produced a profit of forty-four per cent. This excessive rate of profit has drawn into the book trade a larger share of capital than was really advantageous; and the competition between the different portions of that capital has naturally led to the system of underselling, to which the committee above-mentioned are endeavoring to put a stop.*

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* The Monopoly Cases, Nos. 1, 2, and 3, of those published by Mr. Pickering, should be consulted; and, as the public will be better able to form a judgment by hearing the other side of the question, perhaps the Chairman of the Committee (Mr. Richardson) would print those Regulations respecting the trade,—a copy of which, Mr. Pickering states, is refused by the Committee even to those who sign them.

There are two parties who chiefly suffer from this combination—the public and authors. The first party can seldom be induced to take an active part against any grievance; and, in fact, little is required from it, except a cordial support of the authors, in any attempt to destroy a combination so injurious to the interests of both. Many an industrious bookseller would be glad to sell for 5*s.* the volume which the reader holds in his hand, and for which he has paid 6*s.*; and, in doing so for *ready money*, the tradesman who paid 4*s.* 6*d.* for the book would realize, without the least risk, a profit of eleven per cent. on the money he had advanced. It is one of the objects of the combination we are discussing, to prevent the small capitalist from employing his capital at that rate of profit which he thinks most advantageous to himself; and such a proceeding is decidedly injurious to the public.

301. Having derived little pecuniary advantage from my own literary productions, and being aware that, from the very nature of their subjects, they can scarcely be expected to reimburse the expense of preparing them, I may be permitted to offer an opinion, which I believe to be as little influenced by any expectation of advantage from the future as it is by any disappointment at the past. Before, however, we begin to sketch the plan of a campaign against Paternoster row, it will be fit to inform the reader of the nature of the enemy's forces, and of his means of attack and defence. Several of the great publishers find it convenient to be the proprietors of Reviews, Magazines, Journals, and even of Newspapers. The *Editors* are paid, in some instances very handsomely, for their superintendance; and it is scarcely to be expected that they should always mete out the severest justice on works by the sale of which their employers are enriched. The great and popular works of the day are of course reviewed with some care, and with deference to public opinion. Without this, the journals would not sell; and it is convenient to be able to quote such articles as instances of impartiality. Under shelter of this, a host of ephemeral productions are written into a transitory popularity; and by the aid of this process, the shelves of the booksellers, as well as the pockets of the public, are disencumbered. To such an extent are these means employed, that some of the periodical publications of the day ought to be regarded merely as *advertising machines*. That the reader may be in some measure on his guard against such modes of influencing his judgment, he should examine whether the work reviewed is published by the bookseller who is the proprietor of the review: a fact which can sometimes be ascertained from the title of the book as given at the head of the article. But this is by no means a certain criterion, because partnerships in various publications exist between houses in the book trade, which are not generally known to the public: so that, in fact, until Reviews are established in which booksellers have no interest, they can never be safely trusted.

302. In order to put down the combination of booksellers, no plan appears so likely to succeed as a counter-association of authors. If any considerable portion of the literary world were to unite and form such an association, and if its affairs were directed by an active committee, much might be accomplished. The objects of this union should be to employ some person well skilled in the printing, and in the bookselling trade; and to establish him in some central situation as their agent. Each member of the association to be at liberty to place any, or all of his works, in the hands of this agent for sale; to allow any advertisements, or lists of books published by members of the association, to be stitched up at the end of each of his own productions: the expense of preparing them being defrayed by the proprietors of the books advertised. The duties of the agent would be to retail to the public, for *ready money*, copies of books published by members of the association; to sell to the trade at prices agreed upon any copies they may require; to cause to be inserted in the journals, or at the end of works published by members, any advertisements which the committee or authors may direct; to prepare a general catalogue of the works of members; to be the agent for any member of the association in treating respecting the printing of any work. Such a union would naturally present other advantages; and as each author would retain the liberty of putting any price he might think fit on his productions, the public would still have the advantage of reduction in price produced by competition between authors on the same subject, as well as of that arising from a cheaper mode of publishing the volumes sold to them.

303. Possibly one of the consequences resulting from such an association would be the establishment of a good and an impartial Review, a work whose want has been felt for several years. The two long established and celebrated Reviews, the unbending champions of the most opposite political opinions, are, from widely differing causes, exhibiting unequivocal signs of decrepitude and decay. The Quarterly advocate of despotic principles is fast receding from the advancing intelligence of the age; and the new strength and new position which that intelligence has acquired for itself demands for its expression new organs, equally the representatives of intellectual power and of its moral energies; whilst, on the other hand, the sceptre of its Northern rival has passed from the vigorous grasp of those who established its dominion into feebler hands.

A difficulty has been stated that those most competent to supply periodical criticism are already engaged. But it is to be observed that there are many who now supply literary criticisms to journals whose political principles they disapprove; and that if once a respectable and well supported Review* were established, capable of competing, in payment to its contributors, with the wealthiest of its rivals, it would very soon be supplied with the best materials the country can produce.†

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* At the moment when this opinion as to the necessity for a new Review was passing through the press, I was informed that the elements of such an undertaking were already organized.

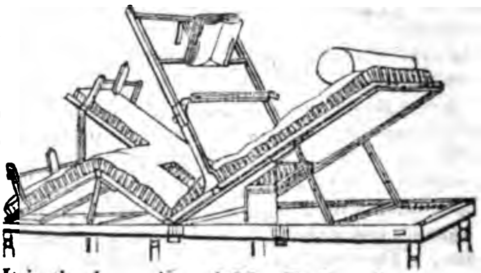
† It has been suggested to me, that the doctrines maintained in this chapter may subject the present volume to the opposition of that combination which it has opposed. I do not entertain that opinion; and for this reason, that the booksellers are too shrewd a class to supply such an admirable passport to publicity. But should my readers take a different view of the question, they can easily assist in remedying the evil, by each mentioning the existence of this little volume to two of his friends.

New Saw.—A machine has recently been constructed by a Mr. Job White, of Belfast, Maine, by which a saw, of the proper form, is made to operate lengthwise of the log, cutting round it, and approaching the centre in a spiral direction, in such a manner as to cut the log into one continuous board. The board unwinds from the log, like the cloth from a weaver's beam.

This invention will be of great value to carriage makers, who use bass-wood boards for pannels, as they may be cut from much smaller, or even hollow logs.—[Northern Farmer.]

Chloride of Soda.—A singular case of a severe burn cured by the use of a solution of the chloride of soda, is recorded in the London Lancet. An attorney, in attempting to put out the flames that had attacked the curtains of his bed, had got his hands burned—blistered, but not broken. He sent for a couple of quarts of the lotion, (4 oz. of the solution to a pint of water,) had it poured into soup plates, wrapped his hands in lint, as no skin was broken, and so kept them for some time. Next morning he was so perfectly well that only one small dried patch of burn remained; yet an hour and a half had elapsed before the application. The same solution has been equally effectual in scalds and bruises. It never fails almost immediately to heal a "black eye." When the chloride is used for scalds, it is necessary to use with it in the after applications some spermaceti oil.—[Philadelphia Sentinel.]

Invalid Bed.—There are many contrivances under this name, but the one represented beneath seems the best mechanical arrangement for the purpose.



It is the invention of Mr. Earl, and consists of a strong frame supporting a jointed bedstead. The situation of the pillow points out the part of the apparatus which supports the upper portion of the body. The mattress should be either of horse-hair or wool, and nailed round its edges to the upper division of the moveable frame.

Another form of bed for an invalid has been suggested by Dr. Arnott. (See page 37, Vol. II.) It consists of a trough containing water, and covered with a cloth composed of cotton coated with Indian rubber. This forms one of the softest and most flexible beds that has ever been devised.—[Partington.]

Sauerkraut, or Salted Cabbage.—It is only ten or fifteen years since this article was introduced on board British ships of war, as an article possessed of valuable antiscorbutic properties. Experience proving it to be valuable for the above mentioned qualities, it is still retained in their supplies. It has long been in use on board of German and Dutch national vessels, as well as merchant ships, the crews of which, even during the longest voyages, remain perfectly free from scorbutic complaints. From time immemorial it has formed a favorite standing dish to the robust inhabitants of the north of Europe, during their long and rigorous winters It is recommended by cheapness, savor, salubrity, and simplicity of preparation. Cabbage should be taken that has sustained two or three white frosts previous to being gathered. Sound compact heads should be chosen; the green and imperfect leaves should be carefully removed, each head divided, and the stalk cut out, then sliced fine with an instrument made for the purpose: a suitable tub, barrel shaped, should be prepared. After cutting, it should be salted with the proportion of a pint of fine salt to the bushel of cabbage, well intermingled, which may then be gradually packed in the tub, pressing it continually with an appropriate wooden rammer. It should then be covered with a circular board, two inches less in diameter than the tub, and a weight of 20 or 30 lbs. placed on it. In two weeks it will undergo the acetous fermentation, when it will be fit for use. Attention should be paid to it every week, to skim the froth from the brine, to wash the board, stone, and sides of the tub. When Sauerkraut is taken out of the tub to cook, it should always be washed with fresh water, and cooked without the addition of any other vegetable. A piece of fat pork, beef, or a fat goose, enclosed with the Sauerkraut, in a close tin vessel, and stewed three hours, forms an excellent dish, and is the more valuable as it can be had at the seasons of the year, and under circumstances, that vegetables cannot be procured.—[Daily Chronicle.]

Education.—The following beautiful extract is from an address delivered before the Zelosophic Society of the University of Pennsylvania, by Hon. Joseph Hopkins, LL. D., page 26:

"The American parent does an injustice to his child which he can never repair, for which no inheritance can compensate, who refuses to give him a full education because he is not intended for a learned profession. Whatever he may intend, he cannot know to what his son will come; and if there should be no change in this respect, will a liberal education be lost upon him because he is not a lawyer, a doctor, a divine? Nothing can be more untrue or pernicious than this opinion. It is impossible to imagine a citizen of this commonwealth to be in any situation in which the discipline and acquirements of a *liberal* education, however various and extended, will not have their value. They will give him consideration and usefulness, which will be seen and felt in his daily intercourse of business or pleasure; they will give him weight and worth as a member of society, and be a never-failing source of honorable, virtuous, and lasting enjoyment, under all circumstances, and in every station of life. They will preserve him from the delusion of dangerous errors, and the seductions of degrading and destructive vices. The gambling table will not be resorted to to hasten the slow and listless step of time, when the library offers a surer and more attractive resource. The bottle will not be applied to to stir the languid spirit to action and delight, when the magic of the poet is at hand to rouse the imagination and pour its fascinating wonders on the soul. Such gifts, such acquirements, will make their possession a true friend, a more cherished companion, a more interesting, beloved, and loving husband, a more valuable and respected parent."

Chain Saw.—P. P. Quimby, of Belfast, (Me.) has invented a saw for cutting lumber, &c. which is believed to be an important improvement. The power may be supplied by horse, steam, or water. The Belfast Journal says: It is put together much like a watch chain. The teeth are separate, and new ones are added as easily as teeth can be set in the common saw. It runs over two cylinders with grooves, and saves more than one half of the time and labor of the straight saw, as it is constantly operating, and it moves like the circular saw. It saws back and forth, and thus saves all the time occasioned by the necessity of carrying back the carriage of the common saw. It unites most completely all the advantages of both the straight and circular saw, and promises to make a rapid and complete revolution in the whole business of sawing wood, marble, &c. We have seen the model, or rather the miniature, in successful operation, doing its office with surprizing precision and beauty. A patent, we hear, has been secured, and a saw on a large scale will shortly be put into action. It has attracted much attention from many curious and practical observers of its principle and work, and will well reward the trouble any one may take to call and examine it.

New Oven.—We have lately examined a model of an oven on a new construction, invented and patented by Mr. Joseph C. Carlisle, of Chesterville. It is built of brick, like any oven, but below the hearth is a vacancy for the fire; and the flue runs spirally around the outside of it—so that it is heated from the outside. It requires no sweeping or wetting of the hearth, and of course is exempt from the cracking which is often occasioned thereby. It may be kept constantly hot, if necessary, as the fire does not communicate at all with the inside of it.—[Maine Farmer.]

NEW-YORK AMERICAN.

OCTOBER 19, 21, 22, 23, 21, 25—1833.

LITERARY NOTICES.

United States Military and Naval Magazine, Nos. 5 and 6 of Vol. I, and 1 and 2 of Vol. II; *Washington*, Benj. Homans.—Accidental circumstances have prevented our noticing in succession, as they appeared; and as, while periodicals are not yet fully established, it is our wish to do—the numbers of this magazine, till they have now largely accumulated on our hands. The delay, however, has enabled us, by instituting a sort of comparative examination among many of them, to ascertain, as we have done to our satisfaction, the progressive character of the work, and consequently to recommend it the more confidently to the support of the two services to whose interest and honor it is especially devoted, as well as to the patronage of the public generally. War is not the whole business of military life, nor the only topic which can give zest to its annals. In our service particularly, both by land and sea, our small but well educated and well disciplined forces, have a constant field before them of peaceful adventure, and curious and interesting research, which may and should be advantageously cultivated, and the result of which might both profitably and agreeably be communicated through the pages of this magazine. There seems, too, a peculiar fitness, that, in a country so extensive as ours, there should be a common repository for the thoughts, the feelings, and the achievements of those who are vowed to its defence, but very many of whom may yet pass through long, long years of service without ever being brought into personal communication with each other. In such a magazine as this they may, however widely separated, still speak to each other, and thus cultivate that mutual harmony and pride of profession which is summed up in the French phrase of *Esprit de Corps.*

Of the manner in which the work is sustained—while expressing upon the whole a favorable opinion in regard to it—we must yet say, that there is to our knowledge, both in the army and navy, talent to render it more forcible and attractive than it has yet been. The editor and publisher does his part fairly and impartially, and it concerns the honor of both services that a miscellany, bearing their title and superscription, should not be abandoned too entirely to the pens of unpractised juniors for its supplies.

The People's Magazine, Parts I and II.

Peter Parley's Magazine, Part I and II. *Boston, Lilly, Wait & Co.; N. York, Mahlon Day,* and *John Wiley* Agent.

The first of these publications appears semi-monthly in numbers, each one containing many engravings or wood cuts, and treating in a brief but intelligent manner, every variety of subject calculated to interest or inform the reader: the whole at the price of *one dollar per annum.* The two parts before us contain thirteen numbers, or about half a year's issue; and when we look at them, and think that for fifty cents, every family may possess themselves semi-annually of such an amusing and really instructive miscellany, we cannot but think those the losing parties who fail to avail themselves of so cheap a gratification—particularly where there are young persons in the family.

What we have thus said of the *People's Magazine,* applies also to *Peter Parley's Magazine,* from the same publishers' office; except that Peter Parley addresses himself rather to young children than to adults or those passed the age of childhood. The price is the same; it is issued also semi-monthly; and the selection of matter and ornament appears to be quite happy.

The Principles of the Art of Modern Horsemanship; by M. Lebeaud: Translated from the French, by D. J. Desmond, Esq. Philadelphia, E. L. Carey & A. Hart.—Equitation, like all other arts has its principles, both in respect of the rider and the horse. They are are well laid down and explained in this little treatise, which, however, we must say, seems to have been translated with dictionary in hand, and without any great knowledge of the original tongue. The following note by the translator, gives good reasons for taking the left, instead of, as is the custom, the right side of a lady on horseback:

When a gentleman accompanies a lady on horseback, he should take the left side of her horse. The custom of taking the right side, is derived from the English mode of riding. The law of England directs the left hand of the road to be taken; the gentleman therefore takes the right, to protect the lady from vehicles, &c. which pass on that side. Here the law directs the right hand of the road to be taken, consequently the gentleman should take the left side of the lady's horse. It seems to be best adapted to afford efficient assistance, whatever may occur. The right hand of the gentleman is perfectly free, and may be used to stop the horse, or rescue the lady from danger. He can on this side aid her in disentangling her dress, disengaging her foot from the stirrup, adjusting her reins, and lifting her off her seat, without exposing her to the accidents which might occur to him, if he attempted to give her assistance from the other side. It is not so easy to afford assistance to the lady with the left hand, nor is it so easy for the rider to command his own horse with the right hand.

An Essay on the Spirit and Influence of the Reformation; by C. Villers, *some time Professor of Philosophy at Gottingen*—translated from the French, with an Introductory Essay, by Samuel Miller, D. D., Professor in the Theological Seminary at Princeton, N. J.—*Philad.* Key & Biddle.—This Essay obtained the prize on the following question, proposed by the National Institute of France:—"What has been the influence of the Reformation by Luther on the political situation of the different States of Europe, and on the progress of knowledge."—Such a question, allowing immense range and involving the deepest interests, required not only great learning and research for the adequate discussion of it, but an unprejudiced and well-disciplined mind. The author, who in this essay seems to have brought to the work all these requisites, was a soldier of the army of *Condé* at the outbreak of the French revolution—a Frenchman and an emigrant, his talents procured for him the station of Professor at Gottingen; and, not himself an ecclesiastic, he entered for and bore away the prize proposed for the discussion of a subject on which ecclesiastics chiefly might have been expected to write. They who have read Moore's Travels of an Irish Gentleman in search of a Religion, will find causes and effects stated in this work which that volume certainly does not view in the same light; and all Protestants will be gratified by this exposition of the benefits which have resulted to the world at large—to freedom, to industry, and to the spread of knowledge—from that Reformation whence they derive their distinctive name.

The preliminary remarks of the Rev. Dr. Miller, are well fitted to prepare the reader for the Essay, by recalling briefly the state of superstitious vassalage enforced by usurped temporal authority, under which Europe groaned when Luther broke the bonds of the church.

Of a work like this no idea can well be communicated by quotations. We annex, therefore, only a short extract concerning our own country, from that portion of the book which discusses *the influence of the Reformation* upon various Christian countries:—

United States of America.—It is sufficient to name this new state, which is wholly European upon the soil of America, to bring to mind that it was created by the partisans of reform and of liberty, flying from the oppression and intolerance of parties. If the English emigrants who had sought shelter on the continent of Europe, during the course of the troubles which have been spoken of, brought back with them the seeds of discord and of hatred, those who took refuge in the solitudes of Pennsylvania, acquired peace and toleration there. They founded Philadelphia, *the city of brothers;* certainly the most pleasing name that ever was borne by the residence of man. Escaped from the tempests to this distant coast, restored to nature and the primitive destination of the human race, these colonists, who had taken their knowledge with them, had leisure to reflect on the origin and rights of societies; on the respective duties of governments and nations. Having besides an entirely new political body to organize, the elements of legislation must necessarily engage their attention first. We have consequently received from thence some admirable precepts, and still more admirable examples. It is known that after having returned under the dominion of the mother country, this association of free and energetic men, of almost all countries, afterwards determined to resume the rights of governing themselves. Louis XVI. seconded them in this enterprise, and sent an army thither. The French who composed it came as friends among these republicans, were admitted into their confidence, and, for the first time, saw this spectacle to them so surprising, of simplicity of manners, of evangelical peace, among men who supported their rights. Reflection arose with them; they compared the principles and the government of their own country, with what they observed among the descendants of Penn, and it is notorious how eminently these Frenchmen, who were thus made soldiers of liberty by a monarch, showed themselves to be so in effect, during the first years of the revolution. Among the great number of proximate and remote causes which contributed to it, the American republic, and the reformation from which it sprang, must not be forgotten.

This state, still weak, at a distance from Europe, has not hitherto had much direct influence, on the political system. But who can calculate that which it may one day acquire on the colonial and commercial system so important to Europe? Who can foretell all that may result in the two worlds, from the seductive example of the independence conquered by the Americans? what new position would the world assume, if this example was followed? and without doubt it will be in the end. Thus two Saxon monks will have changed the face of the globe. The Dominican Tetzel, came impudently to preach indulgences at the gate of Wittemberg; the open and vehement Luther was indignant at it; he raised his voice against the indulgences, and all Europe was affected, put into a ferment, and inflamed. A new order of things was the result; powerful republics were founded. Their principles, still more powerful than their arms, were introduced into all nations. Hence arose great revolutions, and those which may yet arise, are, doubtless incalculable.

This essay was written twenty years ago; and what was then prophetic only, as to the future influence of American independence and American institutions upon the political and social systems of Europe, has already become historical.

Traits and Stories of the Irish Peasantry: 2 vols. *Philadelphia: E. L. Carey & A. Hart.*—According to the declaration of the author in his preface, this book is of genuine Irish manufacture, by one "born amidst the scenes he describes, reared as one of the people, whose situation and characters he sketches, and who can cut and dress a shillelah as well as any man in his Majesty's dominions—aye, and use it too: so let the critics beware." The stories relate chiefly to the northern Irish, whose resentment against, and hatred of, their English invaders, are deep-seated, and possibly inextinguishable. There is certainly much power of delineating character, displayed in these pages; and the peculiarities both of dialect and feeling, are hit off, we are persuaded, with great truth. From the tale of *the party fight and funeral* in the second volume, we make an extract, which exemplifies the powers of the writer. *Vengeance* is the name of an Orange farmer, who had taken a farm which was under the interdict of the misguided Catholic peasantry of the neighborhood:

Vengeance, braving all their threats, removed to the farm, and set about its cultivation with skill and vigor. He had not been long there, however, when a notice was posted one night on his door, giving him ten days to clear off from this interdicted spot, threatening, in case of non-compliance, to make a bon-fire of the house and offices, inmates included. The reply which Vengeance made to this was fearless and characteristic. He wrote another notice, which he posted on the chapel door, stating that he would not budge an inch—recommending, at the same time, such as intended paying him a nightly visit to be careful that they might not chance to go home with their heels foremost. This, indeed, was setting them completely at defiance, and would, no doubt, have been fatal to Vesey, were it not for a circumstance which I will now relate:—In a little dell below Vesey's house lived a poor woman called Doran, a widow; she inhabited a small hut, and was principally supported by her two sons, who were servants—one to a neighboring farmer, a Roman Catholic, and the other to Dr. Ableson the Rector of the parish. He who had been with the Rector lost his health shortly before Vengeance succeeded the M'Guigans as occupier of the lands in question, and was obliged to come home to his mother. He was then confined to his bed, from which, indeed, he never rose.

This boy had been his mother's principal support—for the other was unsettled, and paid her but little attention, being, like most of those in his situation, fond of drinking, dancing, and attending fairs. In short, he became a Ribbonman, and consequently was obliged to attend their nightly meetings. Now it so happened that for a considerable time after the threatening notice had been posted on Vengeance's door, he received no annoyance, although the period allowed for his departure had been long past, and the purport of the paper uncomplied with. Whether this proceeded from an apprehension on the part of the Ribbonmen of receiving a warmer welcome than they might wish, or whether they deferred the execution of their threat until Vengeance might be off his guard, I cannot determine; but the fact is, that some months had elapsed, and Vengeance remained hitherto unmolested.

During this interval the distress of Widow Doran had become known to the inmates of his family, and his mother—for she lived with him—used to bring down some nourishing food to the sick boy. In these kind offices she was very punctual; and so great was the poverty of the poor widow, and so destitute the situation of her sick son, that, in fact, the burthen of their support lay principally on Vengeance's family.

Vengeance was a small thin man, with fair hair, and fiery eyes; his voice was loud and shrill, his utterance rapid, and the general expression of his countenance irritable. His motions were so quick, that he rather seemed to run than walk. He was a civil, obliging neighbor, but performed his best actions with a bad grace; a firm, unflinching friend, but a bitter and implacable enemy. Upon the whole he was generally esteemed and respected—though considered as an eccentric character, for such, indeed, he was. On hearing of Widow Doran's distress, he gave orders that a portion of each meal should be regularly sent down to *her* and her son; and from that period forward they were both supported principally from his table.

In this way some months had passed, and still Vengeance was undisturbed in his farm. It often happened, however, that Doran's other son come to see his brother; and during these visits it was but natural that his brother and mother should allude to the kindness they daily experienced from Vesey.

One night, about twelve o'clock, a tap came to Widow Doran's door, who happened to be attending the invalid, as he was then nearly in the last stage of his illness. When she opened it, the other son entered, in an evident hurry, having the appearance of a man who felt deep and serious anxiety. 'Mother,' said he, 'I was very uneasy about Mick, and just started over to see him, although they don't know at home that I'm out, so I can't stay a crack; but I wish you would go to the door for two or three minutes, as I have something to say to *him*.'

'Why, thin, Holy Mother!—Jack, a-hagur, is there any thing the matther, for you look as if you had seen something?'

'Nothing worse than myself, mother,' he replied; 'nor there's nothing the matther at all—only I have a few words to say to Mick here, that's all.'

The mother accordingly removed herself out of hearing."

'Mick,' says the boy, 'this is a bad business—I wish to God I was clear and clane out of it.'

'What is it said Mick, alarmed.

'Murdher, I'm afeard, if God does'nt turn it off them, some how.'

'What do you mane, man, at all?' said the invalid, raising himself, in deep emotion, on his elbow, from his poor straw bed.

'Vengeance,' said he—'Vengeance, man he's going to get it. I was out with the boys on Sunday evening, and *at last* it's agreed on to visit him to-morrow night. I'm sure and sartin he'll never escape, for there's more *in* for him than taking the farm, and daring them so often as he did—he shot two fingers off of a brother in-law of Jem Reilly's one night that they war *on* for threshing him, and that's coming home to him along with the rest.'

'In the name of God, Jack,' inquired Mick, 'what do they intend to do to him?'

'Why,' replied Jack, 'it's agreed to put a coal in the thatch, in the first place; and although they were afeard to name what he's to get besides, I doubt they'll make a spatch-cock of *himself*. They won't meddle with any other of the family, though—but *he's down* for it.'

'Are *you* to be one of them?' asked Mick.

'I was the third man named,' replied the other, 'bekase, they said, I knew the place.'

'Jack,' said his emaciated brother, with much solemnity, raising himself up in the bed, 'Jack, if you have act or part in that bloody business, God in his glory you'll never see. Fly the country—cut off a finger or a toe—break your arm, or do something that may prevent you from bein' there. Oh, my God!' he exclaimed, while the tears fell fast down his pale cheeks—'to go to murder the man, and lave his little family widout a head or a father over them, and his wife a widow! To burn his place, widout rhime, or rason, or offince. Jack, if you go, I'll die cursing you, I'll appear to you—I'll let you rest neither night nor day, sleeping or waking, in bed or out of bed. I'll haunt you, till you'll curse the very day you war born.'

'Whisht, Mickey,' said Jack, 'you're frightening me: I'll not go—will that satisfy you?'

'Well, dhrop down on your two knees, there,' said Mickey, 'and swear before the God that has his eye upon you this minute, that you'll have no hand in injuring him or his while you live. If you don't do this, I'll not rest in my grave, and maybe I'll be a corpse before mornin'.

'Well, Mickey,' said Jack, who, though wild and unthinking, was a lad whose heart and affections were good, 'it would be hard for me to refuse you that much, and you not likely to be long wid me—I will;' and he accordingly knelt down and swore solemnly, in words which his brother dictated to him, that he would not be concerned in the intended murder.

'Now, give me your hand, Jack,' said the invalid; 'God bless you—and so he will. Jack, if I depart before I see you again, I'll die happy. That man has supported me and my mother for near the last three months, bad as you all think him. Why Jack, we would both be dead of hunger long ago only for his family; and, my God! to think of such a murdering intention, makes my blood run cowld——'

'You had better give him a hint, then,' said Jack, 'some way, or he'll be done for, as sure as you're stretched on that bed; but don't mintion names, if you wish to keep me from bein' murdhered for what I did. I must be off now, for I stole out of the barn;* and only that Atty Laghy's gone along wid the master to the —— fair, to help him to sell the two coults, I couldn't get over at all.'

'Well, go home, Jack, and God bless you, and so he will, for what you did this night.'

Jack accordingly departed, after bidding his mother and brother farewell.

Boys and Girls' Library, No. XVII; *N. York*, J. & J. Harper.—A collection of stories, which may be almost called tracts, is furnished in this volume. They are "the Clergyman's Orphan," a tale founded on fact, by a clergyman of New York; "The Infidel reclaimed;" and "Jane the Orphan." They are well intentioned, but not very skilfully executed.

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*Laboring servants in Ireland, usually sleep in barns.

FOREIGN INTELLIGENCE.

[*From the New-York American of Tuesday.*]

LATE FROM EUROPE.—The north-easterly storm of the last three days, has brought very many homeward bound vessels into port. Among these are, the packet ship *York*, Nye, from London, with papers to 11th September; the Liverpool packet, *North America*, Macy, with London papers to 16th September; the Havre packet *Havre*, Stodard, with Paris papers to 8th September; and the transient merchant vessels, *Warsaw*, Soule, from Bordeaux, and *Mary Jane*, M'Kinstry, from Rochelle, with Paris papers to the 17th September.

The news they bring, which relates chiefly to Portugal, is important. The young Queen Donna Maria had been acknowledged by France and Sweden. She herself, with the wife of Don Pedro, was in England, and had passed some days at Windsor, received and treated with all the honors of royalty. Meanwhile her capital, Lisbon, had been attacked by Bourmont, but without success. This attack was made on the 5th September, and there are accounts in the Paris papers to the 7th inclusive, which speak of preparations by Bourmont for a renewed attack—both armies being in presence. A Spanish courier, however, from Madrid for Paris, spread a report on his route that Lisbon had been again attacked and captured by Bourmont *on* the 7th. This report, however, unless there be error in the date, must be erroneous. We shall not, nevertheless, be surprized to hear by the next short arrival, that the capital has again fallen into the hands of the Miguelite forces, which are undoubtedly numerically stronger than those of the Queen. Lisbon is entirely open on the land side, and though temporary works may have been thrown up by Villa Flor, they would hardly resist a determined attack led by a skilful and now desperate soldier like Bourmont.

The meeting of the Sovereigns of Russia, Prussia and Austria, gives rise to abundant comment in both the English and French papers. The London Spectator seems to think it not improbable that—inspired by the success he has so recently met with in Poland and Turkey, and acting under the conviction that the two antagonist principles of popular liberty and despotic rule are now struggling for the ascendancy in Europe and that those therefore, who, as Frederick says, are "sovereigns by profession," must vindicate at all hazards their privileges—the Emperor of Russia may be seeking to put down in France, as the focus of all Europe's troubles, the government sprung from the revolution of the three days. In this sense the recognition by Sweden of Donna Maria is looked upon as an indication that in such a contest Bernadotte and his people will be on the side of France and England: these three, if firmly united, are more than a match for all Europe besides.

The Cholera had broken out in Seville and Granada with great malignity.

Private letters from Russia states that the cholera has again broken out in Russia, and particularly in the Governments of Saratof and Woronesh, and at Orel and other places in the neighborhood of Moscow.

Mrs. Hannah Moore died on the 7th, at her residence in Windsor Terrace, Clifton, in the 80th year of her age. Few persons have enjoyed a higher degree of public esteem and veneration than this excellent and distinguished lady.

PARIS, SEPT. 15.—The United States ship Delaware, of 80 guns, which sailed from New York on the 11th ult., arrived at Cherbourg on the evening of the 12th inst This ship has on board Mr. Livingston, Envoy of the United States to the French Government.

LIVERPOOL, SEPT. 16.—The packet ship Virginian, Capt Harris, which arrived on Wednesday, in 17 days from New York, made the run from land to land in 14. So pleasant was the weather that her royals were never once taken in during the passage.

The number of vessels which arrived at this port, from Wednesday to Sunday, amounted to 96 from foreign ports, and 130 coastwise and from Ireland, making 226 in five days. On Wednesday alone 104 vessels arrived, namely 45 from foreign ports and 59 coastwise.

LONDON, Sept. 15.—*Smuggling through the French Embassy.*—A seizure of considerable importance was made on Monday last at the custom house, Dover, consisting of silks, blonde lace, veils and ribbands, of the estimated value of £1,500, under the following circumstances:—A person, described in his passport as "Le Baron Franceschi, se rendent en Courier a Londres," landed from the Crusader, Calais packet, and, on his carriage being brought to the custom house, in the usual way for examination, there were found in it 26 paper packages sealed with the seal of the French Foreign Office, and directed to Prince Talleyrand, in London. The examining officer suspecting the packages not to contain despatches, declined to pass them, and the collector of the customs being appealed to, detained the whole with the Baron's carriage. In addition to the 26 packages, there were found a large leathern bag full of packages of the same description, and a portmanteau, which being locked, was sent under seal of office to the King's warehouse; and the whole transaction was communicated to the Board of Customs in London, who, it is believed, lost no time in bringing the same under the notice of Prince Talleyrand, in order to afford his Excellency the earliest opportunity ofrepudiation of all connection with so disgraceful an affair.

[*From the New-York American of Wednesday.*]

By the Philadelphia, from London there are papers to the 20th, which, however, do not furnish dates later from Portugal than those received yesterday.

By the ship Empress from Bordeaux, there are later Paris dates, but they too only communicate details of what we learned yesterday. Up to the morning of the 8th, no new attack had been made on Lisbon. The report however that *Belem*, which is the suburb on the Tagus, of Lisbon, was in the possession of the Miguelites, and the more alarming one still, that the supply of water for which that city is mainly indebted to the noble aqueduct of Alcantara, had been cut off by the assailants, render the position of the capital very critical.

The young Queen had sailed from England. It would be a sad mockery of the regal honors she had received in that country, to find on arriving in her own, that she had lost her kingdom.

The French have equipped a new and large expedition for Algiers, with the purpose of consolidating and possibly of extending their conquests and settlements in Africa. One would think that the overthrow of the predatory and piratical hordes which have so long condemned the whole Mediterranean coast of Africa to sterility and barbarism, while they exercised a degrading and injurious dominion over the commerce of other nations, could not be looked upon with jealousy by England or any other civilized nation; yet, if the article we extract given in Bell's Weekly Messenger be a fair expression of English opinions, such would nevertheless seem to be the fact.

VERSAILLES—NO LONGER ROYAL.—The following paragraph is from a late number of *Galignani*:

We understaud that it is decided to convert the magnificent Palace of Versailles into a museum for receiving collections of paintings and sculptnre, illustrative of the progress of these arts in France, and representing all the most celebrated victories gained by the national armies. The civil list, it is said, has appropriated between two and three millions of francs to this great work, which will be begun immediately.

ENGLISH EMANCIPATION BILL.—As soon as the Slave Emancipation Bill had passed the House of Peers, Sir Bethell Codrington addressed a letter of which the following is a copy, to his Majesty's Colonial Secretary:—

SIR—As the bill, more fatal in my opinion to the slave than even to the West Inndia planter, whose property is to be wrested from him, and which must make every West India proprietor desirous of realizing as much as he can from the wreck of that property which is as yet left him, is now about to become a law, I beg to offer the immediate manumission of every slave on the island of Barbuda (upwards of 500,) on the receipt of my proportion of that sum so inadequately termed compensation.

I have the honor to be, &c. &c

C. BETHELL CODRIDNTON.

The Berlin State Gazette of the 11th inst. says—The Emperor of Russia, in consequence of a slight indisposition, left Schewdt for Bohemia, only at half past seven o'clock, on the morning of the 9th. It appears that the Crown Prince will accompany his Imperial Majesty as far as Frankfort-on-the-Order. The Emperor will thence proceed to Gorlitz where his august sister the Grand Duchess of Saxe Weimar and consort have arrived to meet him. Among the arrivals at Berlin are the Crown Princess, the Princess William, Charles, and Albert of Prussia, with their consorts, the hereditary Grand Duke and Duchess of Mecklenberg Scherwin, and M. de Ribeaupierre, from Schwedt, Count de Witt, Military Governor of Warsaw, has left Berlin for Warsaw."

Extract of a letter of the 13th inst. from Antwerp: "All the fortifications of the citadel are now under repair. A great number of workmen are engaged in re-constructing the rampart destroyed by the breach battery. M. Dubosh, major of the engineer corps, has received orders from the Minister of War to hasten the repair and armament of all the forts on the Scheldt.

The London Herald, in giving the following letter from Brussels, remarks, that Europe at present is full of combustible materials.

BRUSSELS, SEPT. 17.—We have received to-day some important news from the Congress in Bohemia. Our correspondent states, that a long and circumstantial note was addressed by the *King of Holland* to the Monarchs, detailing the origin and progress of the Belgian rebellion; laying great stress on the reliance which he placed on the treaties of Vienna. He then states that the majority of the Belgians took no part in the revolution, and that the greater portion of the wealth and respectability of the nation would gladly see a return of the Nassau family. His Dutch Majesty, after protesting against the determination of a portion of the Conference assembled in London, to act as arbitrators instead of mediators, demands that the treaties of Vienna be put in force, and that he be assisted in recovering his lost kingdom. Previous to the forwarding of this note to the Congress, a copy was submitted to the Courts of Austria and Prussia; and it is positively asserted that these Powers promised to support the pretensions of the writer. The King of Prussia, who has hitherto acted a double part, is now convinced that he must make a decided choice in his future politics, and either link himself with the Liberal party, or support the Emperors of Austria and Russia in their political crusade. On the authority of the writer above alluded to, it appears certain that Frederick has at length decided on joining the Northern Powers, and entering seriously into their plans. The Dutch note having been taken into consideration, it was resolved to support the King of Holland, and, in the event of an intervention by any Power, to consider such an act a declaration of war against all the parties whose signatures were attached to a treaty offensive and defensive to be formed on this basis.

This question having been well considered previous to the meeting of the Monarchs, and all the preliminary articles have been agreed to, the Emperor of Russia sent from St. Petersburg despatches to Prince Lieven, with instructions in conformity with the intended arrangement. And I know for certain that the Belgic Government received this day at noon despatches from London of so unpleasant a nature, that a Minister of the Crown declared "a general war inevitable." Our accounts from Holland fully corroborate all that I have stated. "Never," says a Correspondent from the Hague, "were we so soon certain of the powerful assistance of the Cabinets of St. Petersburg and Vienna as at this moment."

The increased force of cavalry which Austria continues to pour into the Tyrol, particularly near the frontiers of Switzerland, will not fail to attract the notice of the political world. I feel certain that Austria has long been preparing for a general movement; and last year, I gave it as the opinion of the best informed that the close of the year 1833 would bring forth some decided plans from the Northern Powers.

IRELAND.

The New Lord Lieutenant.—The Marquis Wellesley is expected in Dublin on the 26th instant, with full powers to resume the reins of Vice-Regal Government..

Retirement of the Lord Lieutenant.—The Marquis of Anglesea reached Dublin on Tusday, having made the journey for the express purpose of receiving the new Lord Lieutenant, and personally resigning into his hands the government of his lands. This act of courtesy completed, the Noble Marquis passes to Naples and winters at Rome, his physicians having declared that a change of air is absolutely necessary for the preservation of his health.

THORN, AUG. 27.—The late disturbances in various parts of Poland have subsided. Such of the insurgents as have not made their escape across the frontier, have fallen into the hands of the Russians, who, relieved from their fears, now give themselves up to vengeance. More than four thousand persons, the greater part of them belonging to the most distinguished families, gorge the prisons of Poland: the mere suspicion of an insurgent having touched the estate of a proprietor, is sufficient for the latter to be treated as a criminal; and many whose innocence is fully established are still detained in confinement; among them are many old men and even women. Their number increases daily, and the only diminution it experiences, is by those who undergo the capital punishment to which they are condemned, and which has been inflicted upon a great many. The most inquisitorial measures are resorted to in order to extort from the prisoners confessions as to their relations with the inhabitants, and as to the means by which the insurrection was excited and upheld. The Prussian Government vies in cruelty with the Emperor Nicholas. Mr Flotvel came to Posen, in April last, with a pretended amnesty for such of the Polish subjects of Prussia as during the late war for independence joined the ranks of their brethren; but this, after all, was nothing less than a confirmation of the doom denounced against them, for it did not abolish the pain of imprisonment inflicted upon minors, nor the confiscation of property; men who were free from military duty on account of their age or the state of their health have been enrolled as private soldiers. It is announced that the Prussian Government is about to make forced purchases of estates to a great extent, and transfer them to Prussians, in order by degrees to extirpate the Poles from the province. The prisoners confined for political offences are treated with great rigor."

SUMMARY.

The Commissioners under the Treaty of Indemnities with France met on Monday at Washington, pursuant to adjournment—present, Messrs. Campbell and Kane. Mr. Saunders, the other Commissioner, was expected in a few days.

Latest from Capt. Back.—On Thursday last, four bark canoes belonging to the Hudson's Bay Company, arrived at La Chine, near Montreal, from the interior, with passengers belonging to that concern.

The latest accounts of Captain BACK, by these arrivals, are up to the 10th of July, from Cumberland House, reporting favorably of the health and progress of the whole expedition. Capt. Back and Dr. King were proceeding in a light canoe, followed by two boats, the last bearing their luggage, provisions, and other appointments. His despatches for England were to go by Hudson's Bay.

A COMPLIMENT.—Some beautiful blue cloth manufactered by P. H. Schenck & Co. at Glen's falls, having obtained the premium at the Fair, Messrs. *Lynde & Jennings of* 116 *Broadway*, made from it a suit of clothes in the best style, which they presented to Mr. Clay. It was a liberal and well imagined compliment.

[*From the Buffalo Journal, Extra, Oct.* 19.]

GALE ON LAKE ERIE.—On Thursday last, at about 11 o'clock, A. M. a strong breeze sprung up from the west, and soon hauled to the northward and westward, followed immediately by a heavy storm of rain, increasing to the greatest gale ever experienced on the Lake, and continuing with unabated fury until 2 o'clock yesterday morning blowing down chimneys and sweeping off roofs of buildings. The fine block of brick stores of Bennett, Macy and Williams, just finishing on the Terrace, were stripped of their heavy tin roofs, or rather, they were torn up and thrown into a confused mass; the heavy tin roofs of the two large stores being finished on the Flats, belonging to Richard ears were lifted off and fell with a tremendous crash, upon Main street.

The water flooded the Flats, and vast quantities of wood, staves, lumber generally, &c. were floating in confusion about the canals, slips and creeks, and a number of docks torn up.

Considerable damage was done amongst the shipping, &c. which we have not room to publish.

[*From the Gazette.*]

The steamboat Marco-Bozzaris, which sailed from this port last Monday, for Buenos Ayres, is under command of Capt. Richard Sutton, formerly a ship master in the New England States, and more recently merchant at Buenos Ayres. Several years since this gentleman conceived the idea of navigating the Rio de la Plata by steam power, and for that purpose he has obtained from that government the exclusive privilege for ten years. He intends to leave the ports of Buenos Ayres and Montevideo every other evening, and there is very little doubt that his enterprizing project will be liberally patronized. The distance is 110 miles, and the fare will be $10. By making the passage in the night, great facilities will be offered to the merchants of those two cities. The average passage in the present packet is three days, and the accommodations are very inferior.

Fire near Mobile.—Colonel Gadhold's Steam Saw Mill about 18 miles North of Mobile, was entirely destroyed by fire on the 8th inst, with about 200 000 feet of valuable lumber ready for market. The loss is estimated at $12,009. No part of it was insured.—[N. O. Courier.]

WHEELING, Oct. 16—The River is now in a fine navigable state, and from the present prospects we may expect that the navigation of steamboats will not be interrupted again this season.

There have been 6 arrivals and 6 departures of steamboats since our last. The water is 6 feet in the channel, and rising.

[*From the Globe of yesterday.*]

APPOINTMENTS BY THE PRESIDENT.—*Benjaman Tappan*, of Ohio, to be a Judge of the United States for the district of Ohio, in the place of John W. Campbell, deceased.

William M. Gwin, of Mississippi, to be Marshal of the United States for the District of Mississippi, in the place of Samuel W. Dickson, appointed Receiver of Public Moneys at Clinton, in the said State.

Joseph Balestier, of Massachusetts, to be Consul of the United States for the port of Rhio, in the Island of Bintang, in the Malayan Sea.

Thomas H. Barker, of New York, to be Consul of the United States for the port of Elsineur, in the Kingdom of Denmark.

W. M. Haxton, of New York, to be Consul of the United States for the port of Bathurst, in the Island of St. Mary's in the river Gambia.

Robert Grieve, of Leith, to be Consul of the United States for the port of Leith, in Scotland, in the Kingdom of Great Britain, in the place of Joel Nart.

Thomas Wooldrige, of Mississippi, to be Consul of the United States, for the port of Brazoria, in the Province of Texas, in Mexico.

Austin J. Raines, of Missouri, to be Consul of the United States at the port of Monterey, in North California, in Mexico.

We are sorry to learn from the United States Gazette that the U. S. schooner Shark, bound to the Mediterranean, has returned leaky, and is at the Philadelphia Navy Yard, undergoing an examintion.

The Havana.—This beautiful ship was launched Thursday, and it is due to her builders, Messrs. Webb & Allen, to say that for beauty of model, strength and accommodation, she has no superior of her size. Her commander, Capt. Correjo, is well known as an old and successful ship master, and none stands higher at insurance offices. The Havana is to be commanded by this gentleman, as a regular packet between this port and Havana: and as she was built under Capt. C's immediate inspection, no one will doubt her adaptation, in all respects to the trade.—[Gaz.]

The process of inserting the tubes into the rock recently bored at Holt's Hotel was performed with perfect success the present week. The manner was exceedingly simple, but it required great care and skill. The tubes are brass, tinned inside and out, and made in the most substantial manner. They were manufactured by an artist in Broadway, and weighed, in the aggregate 1800 pounds. The pump will shortly be finished, and the proprietor's wishes will, it is believed, be fully realized.—[Gazette.]

[*From the Galenian of 27th September.*]

Capt. Law, of the U. S. Army, who passed through this place last week, informed us that the Winnebago Indians, of Rock river, who were removed by Col. Dodge north of the Wisconsin, or a great part of them, have returned to their old camping ground, near the four lakes, and are engaged in gathering rice and hunting as formerly. They say there is no game north of the Wisconsin, and they cannot live there. They talk of planting corn next season on Rock river. We have since conversed with other gentlemen, who confirm the above statement.

What will our sympathetic brethren 'away down east,' think of these 'poor Indians' now? They have sold their land, and received their pay, so far as the same is payable. They have been removed in pursuance of their treaty, but they will not *stay removed.* If some efficient, decisive and energetic measures are not speedily adopted, and enforced, we have every reason to anticipate a renewal of the scenes which were acted under the guidance of Black Hawk for the last two or three summers, which kept the country in a continual state of suspense and alarm, and retarded the settlement and improvement of the whole north western frontier. Have not the Winnebagoes as many inducements to disturb the peace of our citizens as had the Sacs and Foxes? They cannot, nor do they expect to wage a successful war with us. Nor did Black Hawk. But they have chiefs as *savage* and *ambitious* as he, who would not regard the lives of a few of their warriors for the sake of a *triumphant entre* into the presence of the rulers of our nation; and the *greetings, cheers*, and *caresses* of the mistaken, misguided, and misplaced philanthropy of the great cities of the East.

There are other causes, which may produce the same effect, and determine those Indians to remain where they are, until forced away, and kept away at the point of the bayonet: namely there may be traders and others among them, who are interested in their stay, and who advise them to that course. This may not be the case at present, but we believe it has been the case on many other occasions.

The troops at Fort Winnebago would be amply adequate, it is believed, to keep those Indians off the ceded land. But we are informed that they have no *instructions* to that effect;—that matter being confided, exclusively to Col. Dodge, and the dragoon corps under his command. We have reason to suppose, that so soon as these facts are made known, that a speedy remedy will be supplied.

[*From the Cherokee Phœnix, October 5th.*]

We are informed from an authentic source, that a Special Agent under authority from the President of the United States, clothed with full powers, for entering into a treaty with the Cherokees, has arrived at the Cherokee Agency, awaiting the session of the General Council; which convenes at Red Clay, on the 2d Monday of this month. We expressed our opinion sometime since, of the difficult position in which the President had placed himself in regard to the Cherokee case, and had adopted a system of operations to enroll the Cherokees, by appointing three agents for that purpose, and finding the progress of this measure, upon the whole, unprofitable, we may safely presume, gave rise to the appointment of the fourth. The disposition of the Cherokees with regard to a new treaty, has been unalterably fixed, from which they will not move, while justice has been leudly complaining of the flagrant violations of the seventeen existing treaties. The Cherokees have been placed by circumstances in a novel and peculiar situation. They have purchased fairly the protection of their rights from the General Government, whose interposition at this crisis, has been refused. The great principles involved, and the value of the property, have compelled the Cherokees, however humiliating it may be, to entreat the Government to reinstate them in their original rights. But in the meantime oppression and agents have increased to enable the Government to force a treaty, while the former is pleading for relief, the latter has likewise made it its object to beg and tease for a treaty. This is the disgusting fruits of the humane policy, and we hope the Commissioner may have full authority to remove the great encroachment on the Cherokees, to the honor of the Government.

Died in this town, last Sunday, the Hon. Edward Savage, father of the present Chief Justice of this state, in the 88th year of his age. At an early period he served in the army of the revolution, under a lieutenant's commission. He held, at different times, the important office of representative in both branches of our state legislature, surrogate, judge of the county courts, and was, in 1824, one of the electors of President and Vice President. His character as a soldier, legislator and magistrate, is without spot or blemish. As a christian, he was exemplary in his piety, and he officiated for nearly half a century as an officer in the church of which he was a member. His virtues as an estimable citizen are widely known, and his memory will long be cherished.—He died, at a ripe old age, after having been triumphantly sustained, throdgh all the sufferings and trials incidents to a weight of years, by the consolation of his christain faith. His interment took place on Monday afternoon, in the presance of a large concourse of lelations and friends.—[Washington county Post.]

Kenyon College, Ohio.—Bishop *M'Ilvaine*, on his return to his diocese, met the Convention thereof and delivered an address, from which we take the following account of his mission here in order to raise funds for the College in Ohio:

Having seen the immense importance of Kenyon College, particularly of the Theological department, connected with it, to the supply of Ministers of the Gospel, for the swelling population of the West, and especially for the destitute, and multiplying parishes of Ohio; having seen also the the great necessity of that institution, and how entirely it must fail of accomplishing its great purposes, unless means should be raised to erect additional buildings for students, and instructors, I considered that I could in no way employ the time, before my family could be moved to the West, so advantageously to the Diocese, as by an effort to raise the required contributions.—Under authority from the Board of Trustees of the College, I undertook to raise as the least sum that would answer the purpose, $30,000, in two annual payments. Beginning with my own affectionate people, in Brooklyn, I proceeded to New York, Boston, Providence, Norwich, Conn., and New London; then to Philadelphia and Baltimore; in all which places, the object was entertained with the greatest kindness and interest, by various religious denominations, as one in which all that desire the advancement of useful learning and pure and undefiled religion in the West, should feel themselves concerned. It was delightful to see how sectarian views were kept out of sight by Christians of different names, and nothing regarded in the application but in connexion with the glory of God and the promotion of his kingdom. The whole amount of actual subscriptions from the above cities, aided by a few names from other places, irrespective of promises and expectations, and inclusive of $1000 from P. G. Stuyvesant, Esq. of New York, for the library, (the same gentleman having previously subscribed $400 to the buildings) is $23,520. It is due to the great kindness and confidence of my friends in Brooklyn and the city of New York, to say, that in the former $5547, and in the latter $18,907 of the whole amount were subscribed. The whole expense incurred by the college in my agency in this work, exclusive of a bill for the printing of an address to the public, which has not been received, will not exceed $70. As soon as the collections shall have been sufficiently received, a minute statement of all the subscriptions and receipts will be printed, and a copy forwarded to every subscriber.

I have been thus particular on this topic, because there is nothing in which the Church in Ohio and in all the western States is more deeply concerned than in whatever relates to the efficiency of our College; especially, its bearing upon the preparation of ministers of the Gospel.

In addition to the subscriptions above stated, is the loan I obtained by authority of the Board of Trustees, of $15000, for 10 years, for the purpose of paying off a number of miscellaneous debts contracted during the past transactions of the college. This was effected chiefly through the great attention and the affectionate interest of Samuel Ward, Esq. of New York.

Case of Miss Crandall.—It is well known that an information was recently filed in the Superior Court of Connecticut against Miss Prudence Crandall, for an alleged violation of an act of that State, which prohibits the establishment of any institution, for the instruction of colored persons, not inhabitants of the State, as well as the instruction of any existing institution, or the harboring or boarding, for the purpose of instruction, of any colored persons, not inhabitants of the State, without the consent of a majority of the Selectmen of the town where such institution is situated. The defence rested on the ground, that the statute was in contravention of that portion of the Constitution of the United States, which gives the citizens of each State, all the privileges and immunities of citizens in the several States. In the Brooklyn Advertiser of the 10th, we find a sketch of the charge delivered by Chief Justice Daggett to the Jury, in which he declares, that if slaves, free blacks, or Indians, were citizens, he is not sure that the law would be unconstitutional; but expresses his opinion with the utmost emphasis, that they are not citizens, and of course, are not entitled to the benefit of this constitutional provision. In the first place, he quotes the description of a citizen of the United States, given by Dr. Webster, viz a person, native or naturalized, who has the privilege of exercising the elective franchise, and of purchasing and holding real estate. He proceeds to show, that Indians and slaves are not citizens, and then comes to the same conclusion in regard to free blacks. In respect to the last, we wish that the sketch of the charge had been a little more particular. The argument appears to rest upon the authority of Chancellor Kent; who declares that there is a broad distinction in most of the states, in respect to privileges, between free whites and free colored persons, and the fact, that when the constitution of the United States was adopted, every State, except Massachusetts, tolerated slavery. We perceive no reference to any legislation of Connecticut on the subject of these persons.—[Boston Adv.]

Lander's Niger Expedition.—Mr. Richard Lander, whose fate so generally and deeply interests his country, arrived at Fernando Po on the 1st of May, from the Quorra steamboat, which he left afloat in deep water near the river Tchadda. From her, he descended the Niger in a native canoe; and arrived on board the brig Columbine, which was lying in the Nun River, having been thirteen days on his passage. During this period our gallant traveller stopped to sleep at a native village on the banks of the Niger.

At Fernando Po, Mr. Lander was evidently very ill, though he was rapidly recovering from an attack of dysentery; with which he had been afflicted for some months. His object in returning alone to this place was to procure medicines, as well as tea and other condiments, for the use of the invalids on board the steamboats. We lament to have to confirm the reports of the grievous mortality which had prevailed; the number of deaths on board the vessels of which the expedition is composed had been, indeed, frightfully great. No fewer than twenty-five had perished before Mr. Lander undertook his journey to the coast, including, we regret to add, most of the officers and engineers.

We now have to relate what chiefly led to this lamentable result. The vessels were unfortunately detained at a place called Attah—why, we are not able to ascertain—until Mr. Lander, accompanied by one or two of his associates, went to see the king. They were very hospitably received by his sable majesty, who was equipped in silk velvet, and attended by about three hundred well dressed youths; all of them eunuchs, and forming a kind of body-guard to their prince.

This delay was followed by another still more vexatious. The largest steamboat was forced, by the strength of the current, on a sand-bank, where she was fixed for several weeks, till lifted into deep water (as we have stated) by the swelling of the river. Here she was examined, and found to have sustained no damage; but owing to this unseasonable accident, as well as to the detention at Attah, and, above all, to the deplorable loss of life which had ensued on board the vessels, the party had it not in their power to cultivate their mercantile speculations either to the extent or so successfully as they wished, or as their friends anticipated.

Indian Mode of Education.—Whatever the child learns, he learns for the most part from observation of his elders and his comrades. He soon finds, *pride* is the spur of his exertions. He soon finds, that success as a hunter will make him respected by his tribe, while awkwardness subjects him to intolerable ridicule. He listens to every thing that is said of hunting and trapping at home, and eagerly goes abroad with the view of earning some praise for himself. Thus it takes him but few years to acquire a considerable degree of experience; and his reputation always corresponds to his merit. The same feeling just mentioned is appealed to with equal success in regard to most other branches of an Indian education. It is true, to a great extent, of numerous tribes, as Heckewelder observes respecting the Delawares, that a father need only to say in the presence of his children, "I want such a thing done; I want one of my children to go upon such an errand; let me see who is the *good* child that will do it!" This word *good* operates, as it were, by magic, and the children immediately vie with each other to comply with the wishes of their parent. If a father sees an old decrepit man or woman pass by, led along by a child, he will draw the attention of his own children to the object by saying, "What a *good* child that must be, which pays such attention to the aged! That child, indeed, looks forward to the time when he himself will be old!" or he will say, "May the Great Spirit, who looks upon him, grant this *good* child a long life?" In this manner of bringing up children, the parents, adds Heckewelder, are seconded by the whole community. If a child is sent from his father's dwelling to carry a dish of victuals to an aged person, all in the house will join in calling him a *good* child. They will ask whose child he is, and, on being told, will exclaim, "What! has the *Tortoise*, or the *Little Bear* (as the father's name may be) so excellent a child?" If a child is seen passing through the streets leading an old decripit person, the villagers will, in his hearing, and to encourage all the other children who may be present to take example from him, call on one another to look on and see what a *good* child that must be. And so, in most instances, this method is resorted to for the purpose of instructing children in things that are good, proper, or honorable in themselves; while, on the other hand, when a child has committed a *bad* act, the parent will say to him, "Oh! how grieved I am that my child has done this *bad* act! I hope he will never do so again." This is generally effectual, particularly if said in the presence of others. The whole of the Indian plan of education tends to elevate rather than depress the mind, and by that means to make determined hunters and fearless warriors.—[Thatcher's Indian Traits.]

Antediluvian Animals.—The animals of the Antediluvian world were not monsters; there was no lusus or extravagance. Hideous as they appear to us, and like phantoms of a dream, they were adapted to the condition of the earth when they existed. I could have wished that our naturalist had given the inhabitants of that early condition of the globe names less scholastic. We have the plesiosaurus, and plesiosaurus dolichodeirus, we have the ichthyosaurus and megalosaurus and iguanodon, *pterodactyles*, with long and short beaks, tortoises, and *crocodiles*; and these are found among the reeds and grasses of gigantic proportions, algæ and fuci, and a great variety of mollusca of inordinate bulk, compared with those of the present day, as ammonites and nautili. Every thing declares, that these animals inhabit shallow seas, and estuaries, or great inland lakes: that the surface of the earth did not rise up in peaks and mountains, or that perpendicular rocks bound in the seas; but that it was flat, slimy, and covered with a loaded and foggy atmosphere. There is, indeed, every reason to believe that the classes mammalia and birds were not then created; and that if man had been placed in this condition of the earth, there must have been around him a state of things unsuited to his constitution, and not calculated to call forth his capcities. But looking to the class of animals as we have enumerated them, there is a correspondence; they were scaly; they swam in water, or crept upon the margins; there were no animals possessed of rapidity of motion, and no birds of prey to stoop upon them; there was, in short, that balance of the power of destruction and self preservation which we see now to obtain in higher animals since created, with infinitely varied instinct and powers for defence or attack.

It is hardly possible to watch the night and see the break of day in a fine country, without being sensible that our pleasantest preceptions refer to the scenery of nature, that we have feelings in sympathy with every sucessive change, from the first streak of light, until the whole landscape is displayed in valleys, woods, and sparkling waters: and the changes on the scene are not more rapid than the transitions of the feelings which accompany them. All these sources of enjoyment, the clear atmosphere and the refreshing breezes, are as certainly the result of the several changes which the earth's surface has undergone, as the displaced strata within its crust are demonstrative of these changes. We have every reason to conclude that these revolutions, whether they have been slowly accomplished and progressively, or by sudden, vast, and successive convulsions, were necessary to prepare the earth for that condition which should correspond with the faculties to be given to man, and be suited to the full exercise of his reason, as well to his enjoyment. If he contemplate the common objects around him—if he observe the connexion between the qualities of things external and the exercise of his senses, between the senses so excited, and the condition of his mind, he will perceive that he is in the centre of a magnificent system, and that the strictest relation is stablished between the intellectual capacities and the material world.—[Bell's Bridgewater Treatise.]

Cuvier on National Education.—Give schools before political rights; make citizens comprehend the duties that the state of society imposes on them; teach them what are political rights before you offer them for their enjoyment. Then all ameliorations will be made without causing a shock; then each new idea, thrown upon good ground, will have time to germinate, to grow, and to ripen, without convulsing the social body. Imitate Nature, who, in the development of beings, acts by gradation. The infant remains nine months in the body of its mother; man's physical perfection only takes place at twenty or thirty, and his moral completion from thirty to forty. Institutions must have ages to produce all their fruits witness Christianity, the effects of which are not ye; accomplished, notwithstanding a thousand years of existence.—[Memoirs of Baron Cuvier.]

Anecdote of Marshal Ney.—When Napoleon marched, in the summer of 1800, to bring back victory to the eagles of France, a division of his army, as it hastened to the scene of action, halted within sight of the little town of Sarre-Louis, on the borders of German Lorraine, and the general who led it, pointing with his sword, said with emotion, "Gentlemen and fellow soldiers, this is my birthplace: I am the son of a cooper, and thirteen years ago, on the spot where I now stand, I parted in tears with my father and mother to become a soldier: I bid you welcome to my native town." This leader was the celebrated Marshal Ney.—[Athenæum.]

In the committee on the factory bill, the following sensible question was put to a witness named Peter Smart, the overseer of a factory at Dundee:—

Ques, When do your girls marry ?
Ans. *Whenever they can get an offer !*

A FRAGMENT.

She comes in vision as she came
When heavenly beauty filled her frame—
When, in a mould of mortal birth,
Heaven flung its charms o'er those of earth
But oh! it is in midnight dreams
That I behold those radient gleams
Of vanished brightness come and go,
Like sunshine on the mountain snow.
Her quivering lips may not unroll
The hidden transports of her soul;
But straight before my tranced eye
She stands, a vision of the sky—
A child of Heaven, that may not brook
The ardour of a waking look.—[Fraser's Magazine.]

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR,
35 Wall street.

New-York, August 14, 1833.

WINCHESTER AND POTOMAC RAILROAD.

☞ TO CONTRACTORS FOR EXCAVATION AND MASONRY.—Proposals will be received by the undersigned a Taylor's Hotel, in Winchester, Va. *on the 7th day of November next*, for the Grading and Masonry of *Twenty-seven miles* o the Winchester and Potomac Railroad, commencing near th town of Winchester, and ending at the Shenandoah River The above work will be divided into sections of convenien length; and plots and profiles of the line, and drawings of the requisite constructions, will be exhibited at Winchester, for one week previous to the letting.

Proposals will be received at the same time and place, for delivering, on the line of the Railroad, *Four hundred thousand lineal feet* of Heart Yellow Pine or White Oak Rails, the dimensions of the rails to be five inches wide, by nine inches deep, and in lengths of fifteen and twenty feet.

Any further information in relation to the above work will be given on application, verbally or by letter, to William H. Morell, Principal Assistant Engineer, Winchester, Va. or to the Assistant Engineers on the line.

MONCURE ROBINSON, C. E.

Sept. 27th, 1832. o5 tn7.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 R J M M & F

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 400 genera of American plants.$3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

₊ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
81 R J M M & F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office Apply, post paid. 81 R J M M & F
o1

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng M. & H. R. R. Co., Albany; or James Archibald. Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part o the New-York and Harlem Railroad, now in operation.
J 15 tf

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J3 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

INSTRUMENTS

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio
Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within those few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m25

[_From the Journal of Commerce._]

THE TWENTY-THIRD CONGRESS.

Annexed we present to our readers a list of the members of both Houses of the twenty-third Congress. In the Senate there are four vacancies, viz: one in Mississippi, one in Louisiana, one in Missouri, and one in Pennsylvania. In the House of Representatives, three vacancies, viz:—one in Massachusetts, one in Louisiana, and one in Mississippi. The figures opposite the names of the Senators, indicate the year when their respective terms of service will expire. Those marked in italics are opposition members; those marked * were not members of the last Congress.

SENATE.

Maine.		_North Carolina._	
Peleg Sprague	1835	Bedford Brown	1835
*Ether Shepley	1839	Wm. D. Mangum	1837
New Hampshire.		_South Carolina._	
Samuel Bell	1835	John C. Calhoun (c)	1835
Isaac Hill	1837	Stephen D. Miller	1837
Massachusetts.		_Georgia._	
Nathaniel Silsbee	1835	George M. Troup	1835
†_Daniel Webster_	1839	John Forsyth	1837
Rhode Island.		_Kentucky._	
Nehemiah R. Knight	1835	George M. Bibb	1835
†_Asher Robbins_	1839	_Henry Clay_	1837
Connecticut.		_Tennessee._	
Gideon Tomlinson	1835	Hugh L. White	1835
*_Nathan Smith_	1839	†Felix Grundy	1839
Vermont.		_Ohio._	
Samuel Prentiss	1837	_Thomas Ewing_	1837
*_Benjamin Swift_	1839	*Thomas Morris	1839
New York.		_Louisiana._	
Silas Wright	1837	_Geo. A. Waggaman_	1836
*N. P. Tallmadge	1839	One vacancy (d)	——
New Jersey.		_Indiana._	
The. Frelinghuysen	1835	Wm. Hendricks	1837
*_Sam'l L. Southard_	1839	†John Tipton	1839
Pennsylvania.		_Mississippi._	
William Wilkins	1835	George Poindexter	1835
One vacancy	——	One vacancy (e)	——
Delaware.		_Illinois._	
John M. Clayton	1835	John M. Robinson	1835
†_Arnold Naudain_	1539	Elias K. Kane	1837
Maryland.		_Alabama._	
Ezekiel F. Chambers	1837	William R. King	1835
*_Joseph Kent_	1839	Gabriel Moore	1837
Virginia.		_Missouri._	
Wm. C. Rives (b)	1835	One vacancy (f)	——
John Tyler	1839	†Thomas H. Benton	1839

† Re elected. * New members.

(a) In the place of Governor Marcy, resigned.

(b) In the place of Littleton W. Tazewell, resigned.

(c) In the place of Gen. Hayne, resigned.

(d) Occasioned by the death of the Hon. Josiah S. Johnston.

(e) Filled during the last session by John Black, by appointment of the Governor.

(f) Occasioned by the death of Senator Buckner.

The whole number of Senators elect is 44. Whole number, when the vacancies shall be filled, 48. Of the 44 elected we have put down 19 as Anti-Jackson If to these be added Miller, Calhoun. Poindexter, King and Tyler, (Nullifiers) there would be a majority of five against the Administration. The chance is, that most of the vacancies will be filled by Jacksonians.

HOUSE OF REPRESENTATIVES.

MAINE.
*F. O. J. Smith
Rufus M'Intire
Edward Kavanagh
*Gorham Parks
*Jeseph Hall
Leonard Jarvis
*Moses Mason
George Evans.
NEW HAMPSHIRE.
Henry Hubbard
Jos. M. Harper
*Benning M. Bean
*Franklin Pierce
*Robert Burns.
VERMONT.
Hiland Hall
Horace Everett
Heman Allen
William Slade
*_Benjamin F. Deming._
MASSACHUSETTS.
Isaac C. Bates
Rufus Choate
John Quincy Adams
John Davis
George N. Briggs
Edward Everett
George Grennell, jr.
John Reed
*William Baylies
*_Benjamin Gorham_
*Gayton P. Osgood.
One vacancy.
CONNECTICUT.
Jubez W. Huntington
William W. Ellsworth
Noyes Barber
*_Samuel A. Foot_
Ebenezer Young
*_Samuel Tweedy._
RHODE ISLAND.
Tristam Burges
One vacancy.
NEW YORK.
*Abel Huntington
*Isaac B. Van Houten
Churchill C. Cambreleng
Campbell V. White
*Cornelius W. Lawrence
*Dudley Selden
*Aaron Ward
*Abraham Bockee
*John W. Brown
*Charles Bodle
*John Adams
*Aaron Vanderpool
Job Pierson
Gerrit Y. Lansing
*John Cramer
*_Henry C. Martindale_
*Reuben Whalon
*Ransom H. Giliett
*Charles M'Vean
*Abijah Mann, jr.
*Samuel Beardsley
*Joel Terrell
Daniel Wardell
*Sherman Page
*Noadiah Johnson
Henry Mitchell
*Nicoll Halsey
*Samuel G. Hathaway
*William Taylor
*Wm. K. Fuller
*Rowland Day
*Samuel Clark
John Dickson
*Edward Howell
Frederick Whittlesey
*_George W. Lay_
*_Philo C. Fuller_
*_Abner Hazeltine_
*_Mellerd Fillmore_
*_Gideon Hard_
NEW JERSEY.
*Philemon Dickerson
*Samuel Fowler
*James Parker
*Ferdinand S. Schenck
*William N. Shinn
*Thomas Lee
PENNSYLVANIA.
*_Horace Binney_
*_James Harper_
John G. Watmough
William Heister
*_William Darlington_
David Potts, jr.
*_William Clark_
Harmer Denney
*_George Chambers_
T. M. T. M'Kennan
John Banks
Andrew Stewart
*_Charles A. Barnitz_
G. Burd
*Jesse Miller
*Joseph B. Anthony
Henry A. Mulhenburg
Joel K. Mann
*Robert Ramsey
David B. Wagener
Henry King
Andrew Beaumont
John Laporte
Joseph Henderson
*John Galbraith
*Samuel S. Harrison
Richard Coulter
Joel B. Sutherland.
DELAWLRE.
John J. Milligan.
MARYLAND.
*James P. Heath
*James Turner
*J. T. Stoddart
*Isaac M'Kim
*Richard B. Carmichael
Francis Thomas
*_William P. Johnson_
Littleton C. Dennis
VIRGINIA.
John M. Patton
John Y. Mason
William F. Gordon
Thomas T. Bouldin
William S. Archer
Nathaniel H. Claiborne
Joseph W. Chinn
Charles F. Mercer
*Edward Lucas
*_Samuel McDowell Moore_
Andrew Stevenson
Thomas Davenport
*_John J. Allen_
*George Loyall
*James H. Gholson
*_Edgar C. Wilson_
*James H. Beale
*William P. Taylor
*John H. Fulton
*William M'Comas
*Henry A. Wise
NORTH CAROLINA.
M. T. Hawkins
Thomas H. Hall
William B. Shepard†
Jesse Speight
James M'Kay
Abraham Rencher
Daniel L. Barringer
*_Edmund Deberry_
Lewis Williams
A. H. Shepherd
*Henry Conway
*Jesse A. Bynum
*James Graham
SOUTH CAROLINA.
James Blair (a)
George M'Duffie
*Thomas D. Singleton
*William K. Clowney
*Henry L. Pinckney
*William J. Grayson
Warren R. Davis
John M. Felder
John K. Griffin
GEORGIA.
J. M. Wayne
R. H. Wilde
*G. R. Gilmore
A. S. Clayton
T. M. Foster
*R. L. Gamble
*Seaborn Jones
*William Schley
*John Coffee
FLORIDA.
Joseph M. White, Del.
ALABAMA.
Clement C. Clay
Dixon H. Lewis
*John Murphy
Samuel W. Mardis
*John M'Kinley
MISSISSIPPI.
*Henry Cage
One vacancy (b)
LOUISIANA.
Philemon Thomas
Henry A. Bullard
Edw. L. White
ARKANSAS.
Ambrose H. Sevier, Del.
TENNESSEE.
John Bell
Cave Johnson
James K. Polk
*David W. Dickinson
*Bailie Peyton
John Blair
*Samuel Bunch
*Luke Lea
James Standifer
*_David Crockett_
*John B. Forrester
*William M. Inge
*William C. Dunlap
KENTUCKY.
Chilton Allen
Thomas A. Marshall
*_Amos Davis_
Richard M. Johnson
*_Thomas Chilton_
Thomas P. Moore (c)
*_Benjamin Hardin_
Chittenden Lyon
*_Martin Beatty_*
*_James Love_
Christopher Tompkins
*P. H. Pope
Albert G. Hawes
OHIO.
*Robert T. Lytle
*Taylor Webster
*William Allen
*Jeremiah McLene
*Thomas L. Hamer
*John Chaney
*Robert Mitchell
*John Thompson
*Benjamin Jones
*William Patterson
Humphrey H. Leavitt
*_David Spangler_
*_James M. Bell_
E. Whittlesey
Thomas Corwin
Joseph Vance
Samuel F. Vinton
Jonathan Sloan
*_Joseph H. Crane._
INDIANA.
*Amos Lane
Jonathan M'Carthy
John Carr
*George L. Kinnard
*Edward A. Hannegan
Ratliff Boon
*_John Ewing_
ILLINOIS.
Joseph Duncan
Z. Casey
Charles Slade
MISSOURI.
William H. Ashley
John Bull
MICHIGAN.
*Lucius Lyon, Del.

The above list embraces the names of 237 members, besides the three Delegates. If to these be added 3 for the 3 vacancies, the whole number will be 240. Of the 237 elected, we have put down 77 as Anti-Jackson, to which should be added a dozen or twenty Nullifiers. Still there will be a decided majority in favor of the present Administration.—The proportion is greater than in the last Congress, and there are more who are opposed to the United States Bank.

(a) Union man. All the other Representatives from South Carolina are Nullifiers.

(b) Franklin E. Plummer was elected from the other district, but has resigned, with a view to become candidate for the U. S. Senate.

(c) The votes of one county were rejected, on account of some alleged illegality in the returns. Had these been received, Robt. P. Letcher, an opposition man, would have succeeded by a majority of about 60.

† We have put the names of four North Carolina Representatives in Italics, in compliance with the suggestion of the Boston Advocate, though we are not sure that they will all covet the distinction

MARRIAGES.

On Tuesday evening, by the Rev. Samuel Nichols, of Bedford, N. Y. Dr. ROBERT EDMOND, of Newtown, (Conn.) to Miss MARY L. DELAPLAINE, of the former place.

On Wednesday morning, the 23d inst., by the Rev. Dr. Dewitt, RICHARD C. VAN WYCK, Esq. of Fishkill, D. C., to ANN C. daughter of Abraham Bloodgood, Esq. of this city.

On Monday Evening last, by the Rev. Dr Mc. atty, Mr. GILBERT BEEBE, of New London, to RUTH, youngest daughter of Mr. Daniel Van Colt, formerly of Jersey City.

Last evening, by the Rev. Dr. Mathews, ROBERT J. LIVINGSTON, to LOUISA MATILDA, daughter of Garrit Storm.

At Mount Pleasant, N. Y., on Tuesday, the 15th inst., by Rev N S. Prime, Rev. SAMUEL J. PRIME, Principal of Weston Academy, Conn., to Miss ELIZABETH T. KEMEYS, daughter of the Hon. Edward Kemeys, of the former place.

At Poughkeepsie, on Monday evening last, by the Rev. Dr. Reed, NELSON PARDEE, to Miss ANN MEECH.

At the same place, on Thursday last, by A. Raymond, Esq. TEUNIS STOUTENBURGH, to Miss MARGARET E. STOUTENBURGH, of Hyde Park.

At Princeton, N. J. on the 16th, by the Rev. Dr. Alexander, the Rev. HENRY A. BOARDMAN, of Troy, N. Y. to Miss ELIZA BEACH, daughter of the late Paul T. Jones, Esq. of Charleston, S. C.

At Benville, U. C. by the Rev. John Reynolds, Rev. WM. CASE, Gen Superintendent of the Method. Episc. Church in Canada, to Miss ELIZA BARNES, formerly of Lowell, Mass.

In St. Louis, by the Rev. Mr. Borgna, Maj. WILLIAM S. HARNEY, Paymaster U. S. Army, to Miss MARY MULLANPHY, daughter of the late John Mullanphy.

On the same evening, in Bellville. Illinois; by the Rev. Mr. Lutz, Mr. WM. P. TILTON, to Miss VIRGINIA HAY, daughter of John Hay, Esq.

DEATHS.

On Tuesday morning, C. BILLOP GOBLET, in the 48th year of his age.

On Tuesday evening, 22d inst., of scarlet fever, JOHN HENRY HOBART, only child of the Rt. Rev. Bishop Ives, of North Carolina, aged 4 years and 10 months.

Suddenly, last evening, THOMAS McCREADY, Jr. in the 45th year of his age.

This morning, LYNDE CATLIN, in the 65th year of his age. The friends of the family are invited to attend the funeral on Monday afternoon, at 4 o'clock, from his late residence, No. 53 Chambers street.

Suddenly, yesterday afternoon, BENJ. RUSH COLES, aged 17 years.

Last evening, WM. M. MARSH, second son of Wm. and Ann Marsh, aged five years and six months.

On Monday evening, SARAH, wife of Charles M. Rogers, aged 31 years and 6 months

At 1 o'clock this morning, GERARDUS POST, in the 58th year of his age.

Last evening, JOHN GLANCEY, in the 47th year of his age.

On Sunday afternoon, in the 68th year of his age, Mr. BERNARD WENMAN, an old and respectable inhabitant of this city. He died as he lived, "the noblest work of God- an honest man."

At Rockaway, on the 20th inst. Mr. OLIVER HEWLETT, aged 71, much lamented by an extensive circle of relatives and friends.

At New Canaan, (Conn.) on the 19th inst. RUSSELL BALDWIN, eldest son of Samuel St. John, Jr. aged 6 years.

At Westbrook, (Conn.) on Wednesday the 16th instant, Mr. LEBBEUS CHAPMAN, in the 81st year of his age. Thus has fallen another of the remaining few who served our country during the whole of the Revolutionary War.

Recently, in Orange county, Virginia, JOHN PETTIS, a soldier of the Revolution, and father of the late Spencer Pettis, member of congress, and of F. H. Pettis, Esq. now of this city. He never asked for, nor received, a pension.

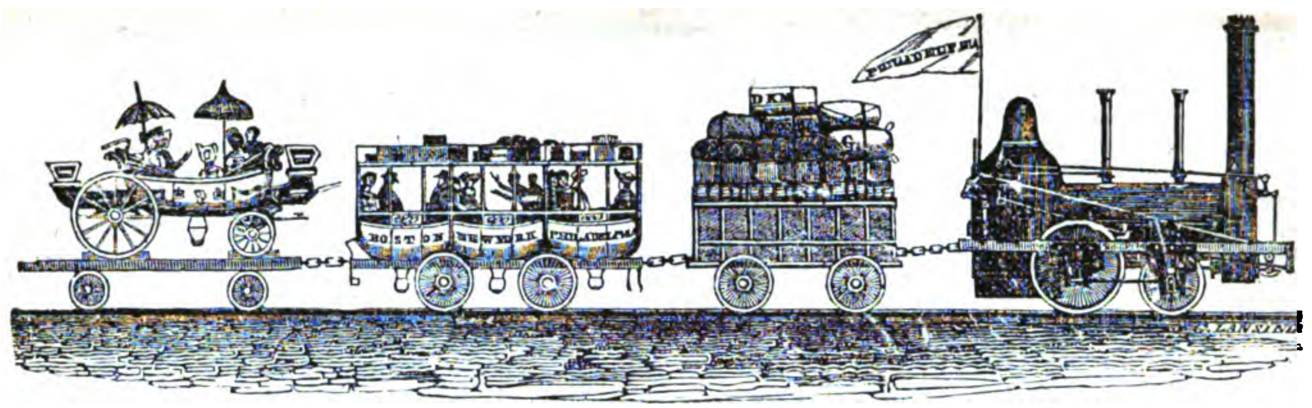
At New Orleans, on the 1st inst. after a short illness, Mrs. ELIZA NOEL DAVIDSON, wife of Dr. Richard Davidson, and daughter of John Pintard, of New York.

On the 11th inst. at his farm near Keytesville, Mr. RICHARD COCK, recently of Campbell county, Virginia' of the Typus Fever.

In Whitehall, Green county, Illinois, of Billious Fever, Mr. JOHN SHANKLIN, of Virginia, and more recently of Logan county, Kentucky

At New Harmony, Indiana, on the 8th Sept. Hon. JAMES O. WATTLES, in the 50th year of his age, formerly a resident of this village.

On Monday, 21st inst., at Woodbridge, N. J. in the 71st year of his age, Mr. SAMUEL READ, of the firm of Read, Vanderbilt & Co. of this city.



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AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, NOVEMBER 2, 1833. [VOLUME II.—No. 44.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, NOVEMBER 2, 1833.

☞ **Railroad Journal.**—In order to meet the wishes of several gentlemen, who are friendly to the Journal, and desirous to obtain it in a more convenient form than in weekly numbers, residing remote from any agent for the work, through whom it can be obtained in bound volumes—I have concluded to put up the past and current volumes in four parts to the year, or thirteen numbers each, stitched in a cover of colored paper, which may be forwarded by mail to any part of the Union, on the same terms as ordinary magazines; or 1½ cent a sheet for *under*, and 2½ cents a sheet of 16 pages, for any distance *over* 100 miles. By this arrangement the work may be obtained in any part of the country, by mail, in a convenient form for preservation, at a trifling expense of postage.

⁂ Those editors, with whom we exchange, will greatly oblige us by giving this one or more insertions.

☞ With this number of the Journal, I forward to each subscriber a Title Page and Index, for the first, and one half of the second year, of the Railroad Journal, divided into parts of six months each, that those who have preserved the work from its commencement, may be enabled to bind it in part, or whole volumes, as they may prefer. It will be observed that one sheet contains a title page and index for parts 1 and 2, of volume 1; and that the other sheet contains a title page and index to the first six months, or from January 1 to July 1, of the present volume, together with a repetition of the statement made by me in the Journal, a few weeks since, relative to its continuance, which, I trust, will induce some of its friends to aid me in obtaining the necessary number of subscribers to insure its continuance *for many years yet to come.*

To the Editor of the American Railroad Journal:

Owego, Oct. 28th, 1833.

Mr. Editor: Sir—Allow me to make the inquiry, why notices of the *lettings* of different public works are not noticed in *your* paper? as it is a paper to which all *engineers*, railroad *companies*, and contractors, ought to have access, in a greater or less degree; and as its support is chiefly derived from such men, or, especially at the present time, from those who have charge of public works. It would only require an invitation from you, to have all such notices forwarded, to have it done; and as soon as contractors find that your paper contains all such notices, in addition to the important matter now treated upon, almost every man following the contracting business would at once subscribe for it, if for no other purpose than to have correct information, when different public works are to be let. An experiment of this kind would not be expensive, and I am very certain it would be the means of giving your useful paper a great circulation.

Yours, respectfully,

A Contractor on the Ithaca and Owego Railroad.

P. S. If you adopt the abovementioned course, I will warrant at least, twenty-five new subscribers within two months after such general request is made to engineers, and men having charge of public works, or at least after the first notice is inserted.

Remarks.—The above communication is cheerfully inserted, but it is proper that we should observe, that we have more than once requested engineers and railroad companies to furnish us with statements, not only of the *time when* they will receive proposals or bids, from contractors, but also the *rates* at which the contracts are made, as well as such other information as may be of service to those who desire to engage in the business. We have often, and will now again observe, that the object of the Journal is to give the earliest, the most accurate, and the greatest possible amount of useful information upon the subjects to which it is devoted; and, therefore, will again request that railroad companies, engineers, and contractors, will furnish us with all such matters, occurrences, and intelligence, as will tend to promote the cause of Internal Improvements, and thereby promote *their own*, as well as the interest of the Journal and its proprietor.

☞ As we have so readily complied with "A Contractor's" suggestion, we trust he will also do his part in forwarding the "twenty-five subscribers" he was so good as to guarantee.

Railroad Meeting.—The railroad meeting to-day, says the Augusta Courier, of the 16th ultimo, adopted the report of the committee, without a dissenting voice. The report, says the same paper, closes with the following resolution:

"*Resolved*, That the citizens of Richmond County will co-operate in the proposed construction of Railroads to Athens and Eatonton, and will send delegates to attend the conference to be held at Greensboro', on Monday, the 21st instant."—[Georgian.]

The Troy and Ballston Railroad is to be put under contract immediately. It will be finished in July next. H. Y. Sargent, of Mechanicville, is the Engineer in Chief.—[Albany Daily Advertiser]

Chemung Canal.—The citizens of Elmira were gratified on Tuesday last with the view of three Boats, moored in the Elmira Basin, which had arrived the previous evening, laden with about 120 tons of merchandize. Two of them had received their cargoes in the city of New-York. They are the first arrivals direct from our great commercial emporium; and the busy and business aspect of our streets during the day was hailed as the commencement of a new era in the trade of our village.—[Elmira Gaz.]

Mr. Rutter's Grand Discovery.—"If real," says an esteemed correspondent, "it will change the face of the world. To convert water into fire has been long a favorite speculation with philosophers, though hitherto the practical means of accomplishing it have constantly eluded their research. Among others who have distinctly pre-figured the discovery, and one of the greatest advantages to be derived from it, namely, its application to steam navigation, I may mention your ingenious friend, Junius Redivivus, who, in his 'Tale of Tucuman,' has these lines:

'Combustion's principle resides in water,'
And if we decompose it, hydrogen,
Thus gathered, may be used as burning matter,
To drive our merchant prows across the main.'"

On the Equilibration of Semi-Circular and Semi-Elliptical Arches; with an Inquiry into the Causes which have sustained, for a great number of years, some Stone Bridges, erected without regard to the true Theory of Arches.

By VAN DE GRAAFF. [For the American Railroad Journal.]

It has been observed by some writers, that semi-circular or semi-elliptical arches are nearly in equilibrio when the roadway is horizontal; but this can only be admitted as true when the arch has a certain determinate thickness at the crown. As an illustration, it may be observed, that the thickness at the crown can be varied in such a manner as to cause the curve of perfect equilibrium to fall either within or without the given arch at the flanks; and there will therefore evidently exist, between those two extremes, a certain quantity of weight at the crown, which will have the best effect towards equilibrating the proposed arch: and this is the quantity which must be sought, when that curve is to be employed as an arch, for it gives the only case in which a correct view of the common analysis will indicate the ellipsis as approaching the true curve within judicious limits.

The method to be pursued in this investigation will be obvious enough, to the mathematical reader, from the hint given above, and I will therefore only show the result in the following Theorem:

In constructing, with a horizontal roadway, a semi-circular or a semi-elliptical arch, whether it be flat, as with the transverse axis horizontal, or surmounted, as with that axis vertical. I say, the most advantageous condition, *with respect to equilibrium*, will be obtained when the roadway and abutments, or piers, are so adjusted as to produce a *thickness at the crown*, including the ring and all the superincumbent matter estimated as reduced to the same specific gravity with it, *equal to one seventh part of the rise of the arch.*

The method of obtaining the most judicious ellipsis, *when a segment only is required*, has been already explained in a preceding number of this journal, but the following fact is thought by many to be a sufficient reason for disregarding the results of theory: "*Bridges which have not been equilibrated have endured for ages, and appear likely to endure till the materials of which they are composed crumble away.*" This experimental result contradicts not the mathematical principles of mechanics; for it must be remembered that such bridges, hitherto found to remain secure in consequence of the friction and adhesion of their materials, have only been subject to the action of loads passing over them at a very slow rate, in which case there was no *tremulous* motion communicated to the arch: but it is the uniform result of all experience, that friction is much reduced when the slightest *motion* takes place; and thus an arch which might stand for centuries, *if suffered to remain perfectly quiescent*, would soon tumble down from the effect of small but *repeated* jarrings, when the various parts do not mutually incline to sustain each other.

To adopt such a system of building would therefore be particularly vicious on a line of railroad, where steam is used as a moving power, for heavy locomotive engines, moving over a bridge with great speed, will communicate a *tremulous* motion to all the materials laid upon the back of the arch; and which, *although it will not be sensible in the first instance*, cannot fail, by frequent repetitions, to have a pernicious result, if the arch be not truly balanced; and as there is a probability of great advances, *for* many years to come, in the power and speed of locomotive engines, it is very necessary to anticipate their effect, and to construct at the present time, as far as practicable, works proper to meet such events.

The theory of arches is built upon the supposition that the superincumbent matter is possessed of gravity alone, without any adhesive quality; and that the ring of the arch is susceptible of sustaining no lateral thrust, but only capable of resisting a longitudinal compression: and these are correct suppositions, for the ring of an arch will sustain without injury a very great thrust longitudinally, but is easily broken with a lateral pressure. When circular or elliptical arches are not equilibrated, the ring is continually strained at the flanks by a disposition to shove *outward;* and when this movement ever takes place, it gives room for the crown to fall in, and it is chiefly the friction, or the adhesive quality of the superincumbent matter, which prevents that effect in every instance in which such arches are not equilibrated. But when an arch is properly balanced, the experiment mentioned above is sufficient to justify a full confidence in the belief that cohesion and friction will be amply sufficient to insure stability during the small time in which a load is passing over the bridge—even when such a load *is much heavier, and moved with greater velocity*, than those which have hitherto been transported over bridges erected without regard to their equilibration.

An equilibrated arch will bear a considerable degree of *tremor* without injury; *and they only require a little more care in their construction.* The subject is one of deep interest, not only to the engineer, but to all who have money invested in such works. V. D. G.

Lexington, Ky. Oct. 1st, 1833.

Mr. Rutter's New Process for generating Heat.

[From the London Mechanics' Magazine.]

We have now the pleasure of laying before our readers the first detailed and authentic account which has yet appeared of the new mode of generating heat, discovered and patented by our esteemed friend Mr. Rutter, and which, to use the words of a correspondent, quoted in our last number, seems destined "to change the face of the world." The heat obtained is, we understand, extremely intense, very uniform, and, what we scarcely expected to find would be the case, *perfectly manageable.* The process has been in successful use at the Salisbury Gas Works ever since the patent was taken out, and it has also been tried on board of a steam vessel, off Lymington, with equally gratifying results. The following details of the process we extract from a copy of Mr. Rutter's Scotch specification, with which he has obligingly favored us—his English and Irish specifications have yet to be enrolled:

"My invention of an improved process for generating heat, applicable to the heating of boilers and retorts, and to other purposes for which heat is required, consists in the employment of bituminous, oleaginous, resinous, waxy, or fatty substances, in a liquid state, and in conjunction with water as fuel, in manner hereinafter described. I carry my said improved process into effect in manner following, that is to say, by allowing or causing one or more of the said bituminous, oleaginous, resinous, waxy, or fatty substances, as coal tar, for instance, to flow from a cistern or other vessel suitably placed, through a pipe or other convenient channel, into a spout or funnel communicating with the interior of an enclosed fire-place or furnace, and at the same time allowing or causing water to flow from a cistern or vessel, placed in a suitable or convenient situation, through another pipe, or other convenient channel, into the beforementioned spout or funnel, in which spout or funnel they are allowed or caused to flow or drop simultaneously upon a fire previously kindled and burning within the before-mentioned inclosed fire-place or furnace, subject to the regulations hereinafter mentioned or described. It is not essential that the coal tar, or other of the before-mentioned substances, should first come into contact with the water in the spout which communicates with the interior of the enclosed fire-place or furnace. Indeed, I rather prefer that they should first come in contact with each other in a funnel at some little distance from the furnace, and from thence be allowed to flow together, through a convenient channel, to the spout by which they are admitted into the interior of the fire-place or furnace; but the tar or other substance, and the water, should be in contact prior to or at their entrance into the fire-place or furnace, and being so in contact should fall simultaneously upon the fire so burning within the fire-place or furnace; and if the fire-place or furnace be large, two or more of the spouts or channels for introducing the coal tar, or other substances, and water together, may be adapted to such fire-place or furnace in such manner and at such distances from each other as may be found most convenient. The stream of coal tar, or other of the before-mentioned substances, and of water respectively, is or may be regulated by means of stop-cocks or valves, either in or attached to the cistern or other vessel, or in any of the pipes or channels before-mentioned. The spout or other channel through which the coal tar, or other of the before-mentioned substances, and the water, are introduced into the interior of the inclosed fire-place or furnace, should be left open, so that a supply of atmospheric air may thereby be admitted to the said inclosed fire-place or furnace, care being taken that too large a supply of atmospheric air be not admitted. Although I prefer the heating, inflaming, and decomposing surface of a fire, burning within an inclosed fire-place or furnace, as aforesaid, in carrying my said improved process into effect, as most favorable to the complete and effectual combustion of the coal tar, or other of the before-mentioned substances, in conjunction with water as aforesaid, yet the same is not absolutely essential to the said process, for the combustion of the coal tar, or other of the before-mentioned substances, in conjunction with water, may be effected in a furnace, oven, or other close vessel, previously heated, and afterwards kept at a proper degree of heat, either by heat disengaged within the said furnace, oven, or close vessel, or by heat being applied externally, or in any other way that shall be found most convenient. It is not essential that the water employed in my said improved process should be fresh or pure water, for sea water and impure water, such as the bilge water in ships, and the ammoniacal liquor in gas works, will answer the purpose. The respective quantities and properties of coal tar, or other of the before-mentioned substances, and of water, proper to be admitted or introduced into the inclosed fire-place or furnace, oven, or other close vessel, will be found to vary according to circumstances and the materials used. The proportions of coal tar and water, which I have found productive of a good result, are one gallon of coal tar, to be be used simultaneously with one gallon and a half of water, and these qualities should be so regulated as not to fall upon the fire or other heated surface, as before-mentioned, in much less than two or three hours; but the proper proportions to be used may be ascertained by observing the interior appearance of the said inclosed fire-place or furnace, oven, or other close vessel, (which may be done at or through one or more of the spouts or other convenient channels provided for the introduction of the coal tar or other material and the water, or at or through one or more convenient apertures made for the purpose); for if water be in excess the flame will be weakened or extinguished; or if tar, or other of the before-mentioned substances, be in excess, then the flame will be obscured by smoke."

Mr. Rutter does not lay any claim to the apparatus or machinery employed in the process, but limits his patent right to "the mode or process of generating heat, by subjecting bituminous, oleaginous, resinous, waxy, and fatty substances, or a mixture of two or more such substances, in a liquid state, in conjunction with water, ignition, combustion, and decomposition, in the manner before described."

Bristol and London Railway.—A Committee of Deputies, appointed by the public bodies of Bristol, to consider of the expediency of the proposed Railway between that city and the metropolis, have made so favorable a report upon it that at a public meeting of the inhabitants, held on the 30th of July last, it was resolved to establish a Company forthwith, to carry the project into effect. The Railway will be from 115 to 120 miles in length, and is estimated to cost £2,805,320. It will go right through Bath, after quitting which it will pass near Chippenham, Wootten Basset, Swindon, Wantage, Abingdon, Pangbourn, and Reading, and terminate either at Paddington or some part of the southern bank of the Thames, as may be hereafter determined. The engineers employed in the preliminary surveys are Mr. Brunel and Mr. Townsend.

Travelling by Steam on Common Roads.—On Saturday morning, September 7th, a steam carriage, constructed by Colonel Macerone and Mr. Squire, started from the wharf, No. 19, at Paddington, with a view of running to Windsor and back. The carriage contained, including Col. Macerone, Mr. Squire, who guided it, and two working engineers, one to look after the fire behind, and one riding on the box before, eleven persons, and might weigh about three tons and a half. The place of starting is about one mile from Hyde Park Corner, making the distance to Windsor twenty-four miles. The carriage reached the new Inn at Windsor in two hours and fifty-six minutes. Including stoppages it went at the rate of nearly eight miles an hour; excluding the stoppages, it travelled at the rate of twelve miles an hour. The time was carefully marked between the mile-stones; and it was found that the speed was at the rate of ten, twelve, thirteen, eleven, and at one time at fourteen miles per hour. On its return, the axle broke, and its progress was stopped; but this is an accident which can be easily guarded against in future. The carriage with which this trip was made, consisted of an open chariot placed before a steam boiler. The merit of the invention consists, we understand, in the boiler. The engine is of the high pressure kind, and has generally been worked at the pressure of one hundred and fifty pounds to the square inch; but on the trip to Windsor the pressure was not equal to that. The whole of the machinery, except the boiler and fire-place, which are behind the chariot, is placed horizontally beneath the carriage, and between a strong frame of wood-work. The size of the whole is not greater than that of an omnibus, and the carriage is capable of being made ornamental.

Colonel Macerone, in a letter to the Morning Chronicle, says:

"I do not know what it may cost to work other steam carriages, but it is essential that you should be informed that, in our journey to Windsor and back, (forty-eight miles,) we did not consume so much as five sacks of coke; which, at two shillings a sack, makes ten shillings, the expense of propelling a carriage which is capable of carrying many more passengers, besides luggage, than a four-horse stage-coach."

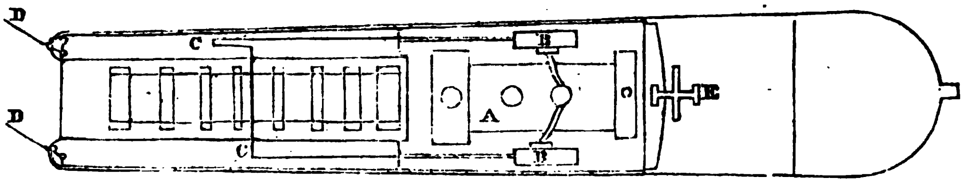
He also adds, in allusion to the comparative cost of running steam or horse carriages:

"The former are exempt from all tax, while the latter have to pay three pence or more per mile, which alone, as I have shown above, is equal to the whole cost of the steam coach's propelling power—the fuel! Lord Althorp positively assured us, in the House of Commons, in July, 1832, that he exempted steam carriages on common roads from all tax, for the sake of encouragement—'not that he was very sanguine as to their being speedily brought to answer.' As it is, we pay turnpikes equal to a four-horse carriage, although we have no horses' feet to pound up the road, and our broad vertical cylindrical wheels do more good than harm.—[London Spectator of Sept. 14.]

A Steam Carriage Trip to Brighton.—On Wednesday morning, shortly after five o'clock, Mr. Walter Hancock, the patentee of the Paddington Steam Omnibus, started from his factory at Stratford, in Essex, with his steam-carriage "Infant," for Brighton. On arriving at London-bridge, he (Mr. Hancock) was joined by six gentlemen, his friends, who took their seats in the carriage, and at six o'clock, the word "ready" being given, the carriage, which was guided by Mr. Hancock himself, proceeded at a most rapid rate, and reached Brighton without the slightest accident or obstruction. It was at first the intention of Mr. Hancock to have returned from Brighton on the same day; but owing to the want of proper arrangements on the road, and being obliged to take up water at whatever place it could be found, considerable time was lost. This circumstance, together with a wish on the part of the friends of the projector to stop a night at Brighton, induced Mr. Hancock to alter his intentions, and he, with his friends, after one or two stages, determined on remaining at Brighton on that night. On Thursday, at twelve o'clock, the carriage was propelled at a gentle pace from the yard, where it had been for the night, to the tank near the New Church, where it took in a necessary supply of water there. Several scientific gentlemen then took their seats in the carriage, and the steam being laid on the vehicle, set off at a most rapid rate towards the Pavilion, and, having passed several of the leading streets, reached the West Cliff in a few minutes, and passed along it in the most gallant style, the houses on each of the street and the streets through which it passed being lined with crowds of spectators. After passing along Bedford and Russell squares, and just as it had reached the bottom of the latter, a portion of the machine, called the clotch, from age and wear, gave way, and this causing the blower out of order, the machine in a short time had to be stopped, but not the slightest injury was done to the carriage or engines; and in the course of the afternoon the carriage was removed to the yard of Messrs. Palmer & Co., where the injury was repaired, and it was the intention of Mr. Hancock to drive through the town on Friday.—[Bell's Messenger of September 15.]

Application of Steam.—An advertiser in the Louisville Advertiser, signed A. B. C., thus announces his pretensions: "After a most persevering study in chemistry for 25 years, and mechanical philosophy, I have arrived at the conclusion, that Captain Savary Fitch, Oliver Evans, Watts and Bolton, Ericsson, Braithwaite, Stevenson, of Manchester, Robert L. Stevens, of New-York, and all the other engineers of science, theory, and practice, with Perkins, of London, and Dupin, have been entirely *on the wrong scent or pursuit for power*. Therefore, I deem it essential to say, I have found the *fulcrum of Archimedes* brought by Thales to me—I shall move a common steamboat at a velocity of 15 miles per hour, on rivers—*I will move a 60 gun battery of 42 pounders*, in 12 feet water, at 12 miles per hour, for national defence, without the possibility of the enemy injuring the vessel or machine—*I will cross the Atlantic in ten days* in a Power Packet, *without stopping for fuel*—I will ascend the river Mississippi at an average speed of 13½ miles per hour; and if only a passage boat, I will navigate the Ohio and Mississippi, without freight, at 18 miles per hour. I will contract to complete and perfect the improvement in any small boat, or large size boat, in two or three months. I am prepared to give satisfactory security and sufficient guarantees to perform whatever contract I make immediately, without defalcation. ☞ Reference to the Editor of the Advertiser.

[We presume the respectable editor of the Advertiser is satisfied that these assertions are correct, or he would not allow his name to be used. We must confess that we are somewhat incredulous about them, and should be much gratified to be able to lay before our readers something more substantial than the mere assertions of an anonymous advertiser.—Ed. Mech. Mag.]



Steamboats with Paddles in the Stern. By J. F. B. [From the London Mechanics' Magazine.]

Sir,—There is a small boat now fitting up in this port which is intended for the use of our Belgian neighbors; and as it is entirely different in construction from any I have yet seen, be kind enough to insert the following description of it in your useful Magazine. Your obedient servant,

J. F. B.

Liverpool, June 4, 1833.

A is the boiler, on Messrs. Stephensons' principle, with tubes running through the length of it. It is a high pressure one, and of precisely the same construction as those of the railway locomotives. B B, two ten boxes cylinders, working by means of cranks. C C, the paddle-wheel, placed in the stern of the vessel.

The vessel is made of iron, except the upper works above water mark; is 76 feet long, 14 feet 10 inches broad, and draws about 2 feet 4 inches water. She is steered by two rudders, D D, on each side of the cavity for the reception of the paddle-wheel;

and the steering wheel is at E, in the centre of the vessel, before the engine house.

In a late trial she went 7 miles in 33 minutes, tide in favor. The steam was not up at its full height, nor were the paddle-boards deep enough.

[*From the Boston Daily Advertiser of 22d ult.*]

MR. HALE,—In Friday morning's Patriot, I notice an article, republished from the Railroad Journal, in reference to the southern termination of the Boston and Providence Railroad, urging the propriety of consulting the accommodation of the public generally, the city of Providence, and the New-York travel and transportation, via Stonington; and calling upon the Directors of the P. &. B. Railroad to pause and reflect before they decide on locating the southern termination of this important public work, within the boundaries of Massachusetts. Concurring with the writer of that article, in regarding the question as one of vital interest, and involving, in a very considerable degree, the eventual success and prosperity of the work, and, moreover, feeling a deep solicitude in its speedy and satisfactory completion, I propose to offer a few thoughts, which have occurred to me in an attentive study of the subject, as connected, not only with its independent interests, but also its relations with the Stonington road, and the New-York and Providence steamboats.

The writer of the article in the Journal has, it appears to me, rather hastily entered his protest against locating the southern terminus in Massachusetts, and without recollecting that there are always two sides to every story. The people of Massachusetts have, as well as their brethren in Rhode Island, an interest in this question, which it may be well worth while to examine; and as a stockholder and native of that state, I do not feel willing to see their interest prejudiced in favor of their neighbors on the other side of Narraganset; and again, the southern termination of the road within the territories of Massachusetts, does not, by any means, offer the local obstacles which the writer in the Journal seems to apprehend.

I presume that the advantage of having the entire road within the jurisdiction of *one* state, and thereby placing it beyond the control of the legislative acts of any other state, avoiding the many inconveniences inseparable from a want of harmony in the operations of two distinct legislatures, will be acceded to at once. Having in view, then, that the accommodation of the road will be greatly facilitated by locating its line within the boundaries of this state, and also, the fact, that the objections urged by the writer in the Journal, of "increased distance and ferry transportation" are not of a serrious character, the question only remains, what point on the Massachusetts side of the bay is best adapted to accommodate the public generally, the city of Providence and the New-York travel and transportation, via Stonington ! In answering this question, it appears to me there can be but one question. *Kettle's Point* offers, in an easy water approach for the New-York steamboats, and natural advantages for constructing the road itself, a strong inducement; which in addition to its near proximity to *Field's Point*, on the opposite shore, where the terminus of the Stonington road may be very advantageously located, renders it far superior to any spot within the possible sphere of location. To the people of Massachusetts such a location is desirable, and may well awaken their attention to the subject—the materials for building, both of wood and stone, are abundant—wharves, and every other facility for commercial pursuits, can be easily constructed—the water access is easy; and with these advantages, why may not the enterprising citizens of our state locate at Kettle's Point a town, which, at no very distant day, shall rival Providence, and give to Massachusetts a superior influence on the waters of Narraganset Bay, by which its shores are bounded ?

There are those to whom this subject is more familiar—to them the stockholders and the public generally look with confidence for a correct decision. Let Massachusetts have her due weight in this question. Let her interests be fairly considered, especially when natural advantages so plainly indicate Kettle's Point for the location of the southern terminus of this important work. A BOSTON STOCKHOLDER.

[*From the National Gazette.*]

The following plan for preventing injury to passengers from the explosion of boilers of steamboats, suggested by Dr. Hare, has been communicated at our request.

The boilers are to be situated either outside of the hull, of which the timbers for a sufficient distance are to be carried up as in a double decker, or otherwise they are to be situated as near as possible to the outside, in a niche or chamber made for the purpose. If a niche be deemed preferable, between the boilers and the interior of the steamer it is proposed to have a strong partition made water tight. In either case, towards the water, and fore and aft, there should be a frame and weather boarding, having no more strength than necessary as a defence against the rain, wind and waves. This framing should be arched, or convex outwards with hinges, so that a pressure from the outside may tend to fasten it, while to a pressure from within it may offer a resistance comparatively slight. Doors for closing the passages between the niche and the deck might be similarly contrived, so as to shut like valves in case of an explosion. It is presumed that in all cases of explosion, the projectile power will be most exerted in those directions in which there is least resistance. It is only on this principle that it can be safe to fire a gun—the bullet yields, while the breech-pin is undisturbed. Before the bulwark between the boiler and the interior of the boat would give way, the external defences of the space occupied by the boiler, and even the boiler itself, would go overboard. Neither the steam, the scalding water, nor the fragments, could reach the passengers.

It is conceived that the effect of the deck in protecting those who were in the lower cabins on board of the steamboat New England, at the period of the late catastrophe, sufficiently demonstrates the security which may be afforded by a stout bulwark.

In making this brief exposition, it is not deemed advisable to specify the means which would be recommended for the purpose of forming and securing a competent bulwark. No doubt is entertained of their efficiency.

IMPROVED RAILWAY.—We have been favored with a sight of the model of a new mode of railway conveyance, which, if brought into use, will present extraordinary advantages to the public. It is on the principle of the Saxton locomotive pulley, and according to the calculations of the projector, who is an engineer of some celebrity, the average rate of travelling will be nearly thirty miles an hour on a light railway laid upon the ordinary road, without requiring the least expenditure for levelling, so that the cost per mile, instead of being £200,000, as it is on the railways now in use, will be only £5000. According to the proposed plan, a horse, walking at the rate of 2 miles an hour over a distance of only one hundred yards, will be able to draw a light carriage, containing four persons, a distance of more than 1,600 yards in the same period of time as that occupied by the animal in performing its own distance. The carriage, on arriving at the end of a mile, will be carried by mechanism from the truck on which it is placed to another truck in waiting to receive it, and the same will be done from mile to mile to the end of the journey, each succeeding carriage being drawn in a manner similar to the first, until the whole train shall have passed over the railway.—[London paper.]

The following notice of the retirement of JOHN I. MUMFORD, Esq. from the editorial chair of the New York Standard, should have appeared in the Journal of last week. It was however, inadvertently omitted. As an editor, few wield a more ready pen—as a partizan, we know of no one more determined and fearless, and although, as a politician, judging him by our *own* standard, he has greatly, and, on some important subject, irreparably, erred, we wish him prosperity, and a happy retirement.

The connexion of the subscriber with the New-York Standard, which has subsisted for more than three years, is dissolved, and he returns to private life. Amid the conflicts of party, he has endeavored to bear himself faithfully and fearlessly in advocacy of the principles of the party with which he enlisted, and which has signally triumphed over all opposition. He preferred courtesy to rudeness, towards even the most reckless of personal and political opponents; and though at one time compelled to violence of invective and severity of rebuke, he had no relish for such course, and rejoiced when the guns of the enemy were silenced, and he was able to repose under the folds of the Standard. So long a connexion with a paper of the character of the Standard, naturally leaves with him a desire for its prosperity and continued usefulness; and, on the dissolution of that connexion, he desires to express his gratitude to the personal friends who assisted in its establishment, and to the great body of the Republican party, the friends of the National and State administrations, who nobly sustained him even in the most gloomy periods of his existence. JOHN I. MUMFORD.

New-York, 18th Oct. 1833.

CURIOUS FACTS AND EXPERIMENTS.—The "Philosophical Transactions" contain a very curious paper on hybernation, from the pen of Dr. Marshall Hall. From the fact that the peculiar condition of certain mammalia in the winter season, in other words, the state of hybernation of these animals, bears so striking an analogy to ordinary sleep, as to justify the expectation of some interesting results being deduced from considering the two in connection, the learned doctor has paid very minute attention to the state of the hedgehog, dormouse, and bat, during sleep, and he has come to a conclusion respecting it which does not appear to be consistent with the testimony of former observers. He states that the animal, in ordinary sleep, experiences a striking diminution of the power of respiration: that the acts of breathing become less; and that its temperature decreases many degrees below the average of what it is in the active state of the animal. Its capability of enduring the abstraction of the atmospheric air is increased to a corresponding extent. Such is the character of the natural sleep of hybernating animals, and it is distinguished from hybernation only in the degree in which the symptoms of the ordinary sleep are developed. In this case, that is, in true hybernation, the function of respiration is nearly altogether suspended; at least the phenomena which result from experiments on animals during hybernation are all confirmatory of such a conclusion. The doctor has shown, likewise, that the air which surrounded the animal whilst in the hybernating state yielded, at most, but very slight signs of any absorption being experienced by it. He placed a bat in a contrivance so constructed as to be capable of indicating the minutest amount of the absorption of gas. In the interval of 60 hours, after a most carefully conducted experiment, he found that three-quarters of a cubic inch of gas had been absorbed. The amount of the diminution in the quantity of gas required by the hybernating animal may be estimated by stating that the average consumption necessary to him in the active state would be an equal quantity of gas in about half the above number of minutes. In the process for determining the absorption of hybernating animals, the nicest precautions are demanded. Whilst the air to be respired is secured against any addition, it is likewise necessary to ascertain constantly the comparative temperature of the animal and of the atmosphere. The author recommends that the experimentor should obtain a mahogany box, with a glass lid, divided horizontally at its middle part by a fold of strong ribbon, and of such dimensions as just to contain the animal. The bat is then to be placed upon the ribbon, and enclosed by fixing the lid in its place. A thermometer with a cylindrical bulb is then to be passed through an orifice made in the box, on a level with the ribbon, under the epigastrium of the animal, and left in this situation. The thermometer should be so placed as to be seen without disturbing the inmate, whilst its indications can be compared with those of another thermometer hung up in the room to express the variations in the temperature of the atmospheric air. The doctor adds, that the layer of silk and the portion of air underneath are sufficient to protect the animal from the immediate influence of the temperature of the table, or whatever may be the support of the box. The phenomena of hybernation prove beyond all doubt the power of the animals who undergo it to sustain with impunity the privation of the atmospheric air. But the most extraordinary feature in this general fact is, that the exercise of this power is limited exclusively to the term of hybernation: for Dr. M. Hall placed a dormant bat in water, in which it remained immersed for eleven minutes, and came out uninjured; whilst a hedgehog, in the active condition of its existence, was put in the same element, and died in three minutes, the ordinary time in which drowning kills mammalia. In a paper previous to the present one, the same author had shown that in those cases in which the amount of respiration is small, the degree of irritability is high, and that, consequently, during the state of hybernation, the irritability of the animal is very sensibly augmented.

Now, if this reasoning were correct, it would necessarily follow, that, if the head of an animal were suddenly removed, and the beat of the heart observed afterwards, that heat would be found to continue longer if the experiment were tried in the hybernating state, than when it was done in the active condition of the animal. This result would undoubtedly show that irritability did increase when the respiration was diminished. The fact was placed beyond all doubt by Dr. M. Hall, in the following experiment: "On March 9th, soon after midnight, I took a hedgehog, which had been in a state of uninterrupted lethargy during 150 hours, and divided the spinal marrow just below the occiput; I then removed the brain, and destroyed the whole spinal marrow as gently as possible. The action of the heart continued vigorous during four hours, when seeing no prospect of a termination to the experiment, I resolved to envelope the animal in a wet cloth, and leave it until early in the morning. At seven o'clock, A. M., the beat of both sides of the heart still continued. They still continued to move at 10 A. M., each auricle and each ventricle contracting quite distinctly.

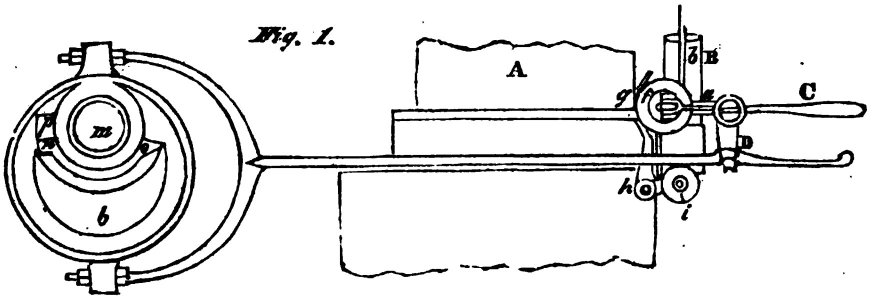
"At half past 11 A. M., all were equally motionless; yet all equally contracted on being stimulated by the point of a pen-knife. At noon the ventricles were alike unmoved, on being irritated as before; but both auricles contracted. Both auricles and ventricles were shortly afterwards irritable." A few weeks after this experiment, the spinal marrow of another hedgehog, in a state of activity, was simply divided at the occiput; the result was, that the beat of the left ventricle of the heart ceased almost immediately; that of the left auricle in less than a quarter of an hour; the right ventricle did not cease to beat before two hours from the time of death, whilst the right auricle ceased long before, though not so soon as the left auricle. The conclusions, then, which we are entitled to draw from these facts, are, that the irritability of the heart is strikingly increased in prolonged lethargy; and that in this state of the animal system the action of the heart continues without any dependence on the functions of the brain or spinal marrow. The general opinion hitherto has been, that during hybernation the sensibility of the animal is greatly impaired. The contrary is maintained by Dr. Hall, on the evidence of his own senses, for the slightest touch applied to one of the spines of the hedgehog, during hybernation, is sufficient to rouse it, and induce it to draw a deep respiration. The same respiration holds good with respect to the power of the animal to use its muscles. This remains perfectly unimpaired, and when there is insensibility or stiffness, then the animal is in a state of torpor, but not of hybernation. Again, though respiration is nearly suspended, the circulation still goes on; but, as it is of venous character, and as it wants the usual impulse, Dr. Hall assigns it to a place in the scale of animal life which is lower than that of the reptiles. The phenomena which are thus presented come before us in a series of facts, which it would be difficult for us to believe, if they were not put beyond all dispute by undoubted evidence. Anatomy and pathology alone can explain the strange process, by describing the increased irritability of the left side of the heart. A very important distinction is drawn by Dr. Hall, between true hybernation and torpor. Torpor may be produced by cold in any animal, and is attended by a benumbed state of the sentient nerves, and a stiffened condition of the muscles; it is the product of cold. But hybernation is limited to a certain number of animals; in it sensibility and power of motion remain unimpaired; its phenomena are produced through the medium of sleep. The nature of hybernation is determined, in a great measure, by the fact, that all hybernating animals avoid exposure to intense cold; but choose a retreat, make nests or burrows, congregate sometimes in clusters. The instinct by which the animals are led to make use of precautions is in connection with the law which requires that the change from the condition of hybernations to that of activity shall be slow and gradual, in as much as the state of the blood in one condition is compatible with the peculiar power of the heart in the other. The object is learnedly treated by Dr. Hall, and is well worthy the attention of scientific men.

Curious Clock.—The most curious thing in the cathedral of Lubeck is a clock of singular construction, and very high antiquity. It is calculated to answer astronomical purposes, representing the places of the sun and moon in the ecliptic, the moon's age, a perpetual almanac, and many other contrivances. The clock, as an inscription sets forth, was placed in the church upon Candlemas-day in 1405. Over the face of it appears an image of our Saviour, and on either side of the image are folding doors, so constructed as to fly upon every day when the clock strikes twelve. At this hour, a set of figures representing the twelve apostles come out from the door on the left hand of the image, and pass by in review before it, each figure making its obeisance by bowing as it passes that of our Saviour, and afterwards entering the doors on the right hand. When the procession terminates, the doors close.—[Clarke's Travels in Scandinavia.]

Sea-weed Banks.—The *Sargassum vulgare*, the tropic grape of sailors, and the Fucus natans of the older writers, is worthy attention, not only from its wandering habits, quitting as it does the submarine soil to which it probably in its early stage is attached, but also for the astonishing profusion in which it so frequently is found. It only grows within forty degrees of latitude on either side of the equator, but currents often cast it on our coast. It is a remarkable circumstance in the history of this plant, that it is chiefly localed in its position, even when detached, forming two great banks, one of which is usually crossed by vessels homeward bound from Monte Video, or the Cape of Good Hope; and so constant are they in their places, that they assist the Spanish pilots to rectify their longitude. It is probable that these banks were known to the Phœnicians, who in thirty days' sail with an easterly wind, came into what they called the "Weedy Sea;" and to the present day, by the Spaniards and Portuguese, the chief tract is named Mar de Zargasso. It was the entering of such fields of fucus as these that struck so much terror into the minds of the first discoverers of America; for sailing tardily through extensive meadows for days together, the sailors of Columbus superstitiously believed that the hindrance was designed by heaven to stay their adventurous course: hence they wildly urged their commander to proceed no further, declaring that through the banks thus woven by nature, it would be presumptuous impiety to force a way.—[Burnett's Outlines of Botany.]

The vintage in France this year is one of the best that has been known for several years past. The quality of the wines is almost equal to that of the celebrated year of the comet, whilst the quantity is much larger, and even beyond that of what is called an average year. It is expected that there will be a fall of about 20 per cent. in the prices of the finer description of wines. In Champagne already the wines which were sold at 50 francs per dozen are now offered for thirty. and the commoner sorts of Champagne wine, which are frequently sold in England as high as 72*s*. per dozen, are offered at 27 francs, delivered at Calais. This is something under 2*s*. per bottle; and, adding the duty and all other expenses, Champagne wine, equal to three fourths of what is drunk in London, may be had for less than two guineas per dozen. The Rhenish wines will be also very good and abundant this year.

Fig. 1.



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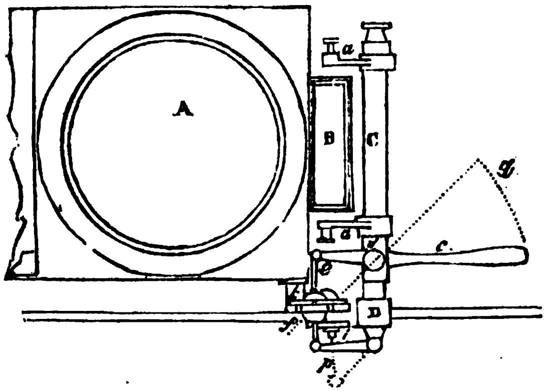

Apparatus for Setting in Motion, Stopping, or Reversing the Steam Engine. By Jas. Whitelow. [From the London Mechanics' Magazine.]

Sir,—To be able to set on, stop, or reverse the motion in coal pit, steamboat, and locomotive engines, without shifting the hand from one lever to another, enables the person in attendance to effect his purposes in *less time* and with more certainty.

Fig. 1 is an elevation, and fig. 2 a ground plan, of a very simple apparatus for effecting the above ends, applied to a common low pressure steam engine.

The same parts are marked by the same letters in both the plan and elevation. A is the cylinder; B, the nozzles; C, the wiper shaft; D, the wiper; *a a*, levers for working side rods, *b*, running along side the nozzles to the cross head, or top of valve rod. The starting bar, *c*, works on a centre, *d*, in the wiper shaft, and is produced beyond it until it meets the rod *e*, on which the pulley, *f*, is at liberty to revolve or work lengthwise, to allow the bell crank lever, *g h i*, always to rest in its groove. The lever, *g h i*, turns on a pin or stock fixed in the side of the cistern; the end, *g*, of this lever is a circle drawn from the centre of the wiper shaft, so that the lever will not move when the valve is wrought by hand; the pulley, *i*, turns on the other end, and lifts or lowers into gear the eccentric rod, by a simple motion of the starting bar sidewise. The eccentric, *b*, is at liberty to make half a revolution on the cranking shaft, *m*, but is prevented from turning more, by catches, *n o*, fixed on the shaft which works against the mug, *p*, cast on the eccentric, so that, in whichever way the engine turns, one or other of the catches on the crank shaft will work the eccentric so as to open and shut the valves at the proper time for the engines working in that direction. When the starting bar is in the position shown in the above sketch, the engine keeper can work the valve so as to start the engine in any direction, or stop it at any part of the stroke he pleases. After the engine is started in the direction wanted, the motion is continued in that direction by simply pushing the starting box into the position of the dotted line, *d g*, when the rod, *e*, and lever, *r*, will take the place of the other dotted lines, and allow the eccentric rod to fall into gear.

Fig. 3 is a side, and fig. 4 an end elevation, of this apparatus, where the starting bar works in a vertical direction, and is so simple as to need no description. The same letters point out the same parts in figures 1 and 2. Your obedient servant,

James Whitelow.

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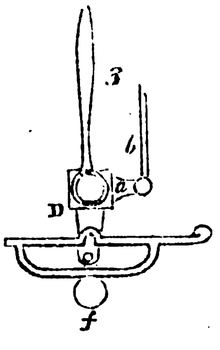

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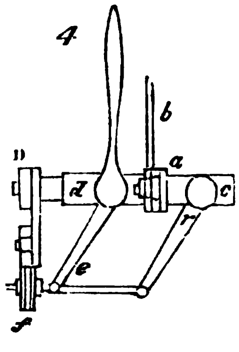

Objections to the received Theory of Rain.—It is the received opinion that rain is caused by the heat of the sun's rays raising the water in a state of vapor, into the higher regions of the atmosphere, and being there condensed by the cold, descends again, and thus forms rain.

Objection First.—That water requires a heat equal to sixty degrees of Fah. thermometer, to raise it into vapor, according to the commonly received opinion, when experience proves that we have the most rain when it stands below temperate, which is 55 deg.: for instance, the snow in frost, and the rain after.

Objection Second.—That when we have the greatest heat, with the largest loss of water, we have the least rain, as witness every dry summer.

Objection Third.—When vapor is condensed into water, which it must be if exposed to an atmosphere colder than itself, it must immediately descend, as witness the dews; it being heavier in its specific gravity than the bulk of the surrounding atmosphere. Therefore, were water raised into vapor, by the heat of 300 degrees, it must be immediately condensed by the sudden change of temperature, and descend before it had risen to the height of one hundred yards, much less rise into the highest regions of the atmosphere, and remain there for a length of time, and then form clouds, and so produce rain, as witness the steam arising from the boiler of a steam engine, or the refrigeratory of a common alembic.

Objection Fourth.—Experience has proved that we have the most rain in nights, and in winter, when, of course, it must be the coldest, as then the sun has the least influence.

Objection Fifth.—There is no vapor arises from the water when the sun has the most influence; for place a looking-glass over a river, when the sun shines with his meridian force, and it will not so much as dim it; but when the sun is gone down, the vapor rises so as to be visible.

Objection Sixth.—If the old theory be true, there would always be the most rain in the tropics, where the sun is vertical, which is not the fact.—[Field Naturalists' Magazine.]

Babbage on the Economy of Manufactures.

[Continued from page 681.]

ON THE EFFECT OF TAXES AND OF LEGAL RESTRICTIONS UPON MANUFACTURES.

304. As soon as a tax is put upon any article, the ingenuity of those who make, and of those who use it, is directed to the means of evading as large a part of that tax as they can; and this may often be accomplished in ways that are perfectly fair and legal. An excise duty exists at present of *3d.*‡ per pound upon all writing paper. The effect of this impost is that much of the paper which is employed is made extremely thin, in order that the weight of a given number of sheets may be as small as possible. Soon after the first imposition of the tax upon windows, which depended upon their number, and not upon their size, new-built houses began to have fewer windows and of a larger size than before. Staircases were lighted by extremely long windows, illuminating three or four flights of stairs. When the tax was increased, and the *size* of windows charged as single was limited, then still greater care was taken to have as few windows as possible, and internal lights became frequent. These internal lights in their turn became the subject of taxation; but it was easy to evade the discovery of them, and in the last act of Parliament, reducing the assessed taxes, they ceased to be chargeable. From the changes thus successively introduced in the number, the forms, and the positions of the windows, a tolerable guess might in some instances be formed of the age of a house.

305. The effects of regulations of excise upon our home manufactures are often productive of inconvenience, and check in some measure the natural progress of improvement. It is frequently necessary, for the purposes of revenue, to oblige manufacturers to take out a license, and to compel them to work according to certain rules, and to make stated quantities at each operation. When these quantities are large, as they usually are, they deter manufacturers from making experiments upon new materials: they likewise prevent them from discovering, by trial, improved methods of conducting their processes. Difficulties of this nature have occurred in experimenting upon glass for optical purposes; and in this case, permission has been obtained by fit persons to make the experiments, without the interference of the excise. It ought, however, to be remembered, that such permission, if frequently granted, might be abused; and that the greatest protection against such an abuse will be found in bringing the force of public opinion to bear upon scientific

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‡ Twenty-eight shillings per cwt. for the finer, twenty-one shillings per cwt. for the coarser papers.

men; and thus enabling the proper authorities, although themselves but moderately conversant with science, to judge of the propriety of the permission, by the public character of the applicant.

306. From the evidence given, in 1808, before the Committee of the House of Commons, on *Distillation from Sugar and Molasses*, it appeared that, by a different mode of working from that prescribed by the Excise, the spirits from a given weight of corn, which then produced eighteen gallons, might easily have been increased to twenty gallons. Nothing more was required than to make what is called the *wash* weaker: the consequence of which is that fermentation goes on to a greater extent. It was stated, however, that such a deviation would render the collection of the duty liable to great difficulties; and that it would not benefit the distiller much, since his price was enhanced to the customer by any increase of expense in the fabrication. Here then was an instance in which a quantity, amounting to one-ninth of the total produce, was actually lost to the country. A similar effect arises in the coal trade, from the effect of a duty, for, according to the evidence before the House of Commons, it appears that a considerable quantity of the very best coal is actually wasted. The amount of waste is very various in different mines, but in some cases it amounts to one-third.

307. The effects of duties upon the import of foreign manufactures are equally curious. A singular instance occurred in the article *bar iron*, which was liable to a duty of 140 per cent. ad valorem, on introduction into the United States, whilst that upon *hardware* was 25 per cent. In consequence of this tax, large quantities of malleable iron rails for railroads were imported into America under the denomination of hardware; and the difference of 115 per cent. in duty more than counter-balanced the expense of fashioning the iron into rails prior to its importation.

308. Duties, drawbacks, and bounties, when considerable in amount, are all liable to objections of a very serious nature, from the frauds to which they give rise. It has been stated before Committees of the House of Commons, that calicoes, made up in the form and with the appearance of linen, have frequently been exported for the purpose of obtaining the bounty. The calico made up in this way sells at 1*s.* 4*d.* per yard, whereas linen of equal fineness is worth from 2*s.* 8*d.* to 2*s.* 10*d.* per yard. It appeared from the evidence that one house in six months sold five hundred such pieces.

In all cases heavy duties, or prohibitions, are ineffective, as well as injurious: for unless the articles excluded are of very large dimensions, there constantly arises a price at which they will be clandestinely imported by the smuggler. The extent, therefore, to which smuggling can be carried should always be considered in the imposition of new duties, or in the alteration of old ones. Unfortunately, it has been pushed so far, and is so systematically conducted, that the price per cent. at which most contraband articles can be procured from France is well known. From the evidence of Mr. Galloway, it appears that from 30 to 40 per cent. was the rate of insurance on exporting prohibited machinery from England, and that the larger the quantity the less was the per centage demanded.

309. In examining into the effect produced, or to be apprehended, from any particular mode of taxation, it is necessary to inquire a little into the interests of the parties who approve of the plan in question, as well as those who object to it. Instances have occurred where the persons paying a tax into the hands of government have themselves objected to any reduction. This happened in the case of one class of calico printers, whose interest was injured by a removal of the tax on the printing. They received from the manufacturers payment for the duty about two months before they were called on to repay it to government: the consequence was that a considerable capital always remained in their hands. The evidence which states this circumstance is well calculated to promote a reasonable circumspection in such inquiries.

"Do you happen to know any thing of an opposition from calico printers to the repeal of the tax on printed calicoes?

"I have certainly heard of such an opposition, and I am not surprized at it. There are a very few individuals who are, in fact, interested in the non-repeal of the tax. There are two classes of calico printers: one, who print their own cloth, send their goods into the market, and sell them on their own account; they frequently advance the duty to government, and pay it in cash before their goods are sold, but generally before the goods are paid for, being most commonly sold on a credit of six months; they are of course interested on that account, as well as on others that have been stated, in the repeal of the tax. The other class of calico printers print the cloth of other people: they print for hire, and on re-delivery of the cloth, when printed, they receive the amount of the duty, which they are not called upon to pay to government sooner, on an average, than nine weeks from the stamping of the goods. Where the business is carried on upon a large scale, the arrears of duty due to government often amount to eight, or even ten thousand pounds, and furnish a capital with which these gentlemen carry on their business; it is not, therefore, to be wondered at that they should be opposed to the prayer of our petition."

310. The policy of giving bounties, and of enforcing restrictions against foreign articles, which can be produced more cheaply in other countries, is of a very questionable nature: and, except for the purpose of introducing a new manufacture in a country where there is not much commercial or manufacturing spirit, is scarcely to be defended. All incidental modes of taxing one class of the community, the consumers, to an unknown extent, for the sake of supporting another class, the manufacturers, who would otherwise abandon that mode of employing their capital, are highly objectionable. One part of the price of any article which is so produced consists of the expenditure, together with the ordinary profits of capital: the other part of its price may be looked upon as charity, given to induce the manufacturer to continue an unprofitable use of his capital, in order to give employment to his workmen. Now, in many instances, if the actual amount of the latter part of the price were known, the extent of the payment made by consumers, on account of restrictions only, would astonish *even those who advocate them;* and it would be evident to both parties, that the employment of capital in that particular trade ought to be abandoned.

311. The restriction of articles produced in a manufactory to certain sizes is attended with an economical effect. This arises chiefly from the smaller number of different tools required in making them, as well as from less frequent change in the adjustment of those tools. A similar economy prevails in the navy, by having ships divided into a certain number of classes, each of which comprises vessels of the same dimensions: the rigging made for one vessel will fit any other of its class.

312. The effects of the removal of a monopoly are often very important, and they were perhaps never more remarkable than in the bobbin-net trade, in the years 1824 and 1825. These effects were, however, considerably enhanced by the general rage for speculations which was so prevalent during that singular period. One of the patents of Mr. Heathcote for a bobbin-net machine had expired, whilst another, for an improvement in a particular part of such machines, called a *turn-again*, had yet a few years to run. Many licenses had been granted to use the former patent, which were charged at the rate of about five pounds per annum for each quarter of a yard in width, so that what is termed a *six-quarter frame*, (which makes bobbin-net a yard and a half wide,) paid thirty pounds a year. The second patent was ultimately abandoned in August, 1823, infringements of it having taken place.

The bobbin-net machine occupies little space, and is, from that circumstance, well adapted for a domestic manufacture. It had also hitherto yielded a very large profit: it was therefore not surprizing that, on the removal of the monopoly arising from this patent, a multitude of persons became desirous of embarking in the trade. The machines which already existed were principally in the hands of the manufacturers; but a kind of mania for obtaining them seized on persons of all descriptions, who could raise a small capital; and, under its influence, butchers, bakers, small farmers, publicans, gentlemen's servants, and, in some cases, even clergymen, became anxious to possess bobbin-net machines.

Some few machines were rented; but in most of these cases the workman purchased the machine he employed, by instalments of from £3 to £6 weekly, for a six-quarter machine; and many individuals, unacquainted with the mode of using the machines so purchased, paid others of more experience for instructing them in their use—£50 or £60 being sometimes given for this instruction. The success of the first speculators induced others to follow the example; and the machine-makers were almost overwhelmed with orders for lace-frames. Such was the desire to procure them, that many persons deposited a large part, or the whole of the price, in the hands of the frame-makers, in order to insure their having the earliest supply. This, as might naturally be expected, raised the price of wages amongst the workmen employed in machine-making: and the effect was felt at a considerable distance from Nottingham, which was the centre of this mania. Smiths not used to *flat filing*, coming from distant parts, earned from 30 to 42*s.* per week; finishing smiths, accustomed to the work, gained from 3 to £4 per week; the forging smith, if accustomed to his work, gained from 5 to £6 per week, and some few earned £10 per week. In making what are technically called *insides*, those who were best paid were generally clock and watch makers, from all the districts round, who received from 3 to £4 per week. The *setters-up* persons, who put the parts of the machine together, charged £20 for their assistance; and a six-quarter machine could be put together in a fortnight or three weeks.

Good workmen, being thus induced to desert less profitable branches of their business, in order to supply this extraordinary demand, the masters, in other trades, soon found their men leaving them, without being aware of the immediate reason: some of the more intelligent, however, ascertained the cause, and went from Birmingham to Nottingham, in order to examine into the circumstances which had withdrawn almost all the journeymen clock-makers from their own workshops. It was soon apparent that the men who had been making clocks at Birmingham, at the rate of 25*s.* a week, could earn £2 by working at lace-frame making at Nottingham.

On examining the nature of this profitable work, the clock-makers perceived that one part of the bobbin-net machines, that which held the bobbins, could be easily made in their own workshops. They therefore contracted with the machine-makers, who had already more work ordered than they could execute, to supply the *bobbin-carriers*, at a price which enabled them, on their return home, to give such increased wages as should retain their own workmen, as well as yield themselves a good profit. Thus an additional facility was afforded for the construction of these bobbin-net machines. The conclusion was not difficult to be forseen: the immense supply of bobbin-net thus poured into the market speedily reduced its price. This reduction in price rendered the machines by which the net was made less valuable: some few of the earlier producers for a short time carried on a profitable trade, but multitudes were disappointed, and many ruined. The low price at which the fabric sold, together with its lightness and beauty, combined to extend the sale; and ultimately, new improvements in the machines rendered the older ones still less valuable.

313. The bobbin-net trade is at present both extensive and increasing; and, as it may probably, at some future time, claim a larger portion of public attention, it will be interesting to describe briefly its actual state.

A lace-frame, *at the present day*, on the most improved principle, manufacturing a piece of net two yards wide, when worked night and day, will produce six hundred and twenty *racks* per week. A *rack* is two hundred and forty holes; and, as in the machine to which we refer, three *racks* are equal in length to one yard, it will produce twenty-one thousand four hundred and ninety-three square yards of bobbin-net annually. Three men kept this machine constantly working, and they were paid by piece-work about 25*s*. each per week in 1830. Two boys, working only in the day-time, can prepare the bobbin for this machine, and are paid from 2 to 4*s*. per week, according to their skill. Forty-six square yards of this net weigh two pounds three ounces: so that each square yard weighs a little more than three quarters of an ounce.

For a condensed and general view of the present state of this trade, we shall avail ourselves of a statement by Mr. William Felkin, of Nottingham, entitled "Facts and Calculations illustrative of the Present State of the Bobbin-net Trade," dated September, 1831. It appears to have been collected with care, and contains, in a single sheet of paper, a body of facts of the greatest importance.[*]

314. The total capital employed in the factories, for preparing the cotton, in those for weaving the bobbin-net, and in various processes to which it is subject, is estimated at above two millions of pounds, and the number of persons who receive wages at above two hundred thousand.

"Comparison of the value of the raw material imported, with the value of the goods manufactured therefrom:

"Amount of Sea Island cotton annually used, 1,600,000 lbs., value £120,000: this is manufactured into yarn, weighing 1,000,000 lbs., value £500,000.

"There is also used 25,000 lbs. of raw silk, which cost £30,000, and is doubled into 20,000 lbs. thrown, worth £40,000.

Raw Material.	Manufacture.	Sq're yards produced.	Value pr sq. yard. s. d.	Total Value.
Cotton, 1,600,000 lbs.	Power Net	6,750,000	1 2	421,875[†]
	Hand do.	15,750,000	1 9	1,378,125[‡]
	Fancy do	150,000	3 6	26,250
Silk, 25,000 lbs.	Silk Goods	750,000	1 9	65,625
		23,460,000		1,891,875

"The brown nets which are sold in the Nottingham market are in part disposed of by the agents of twelve or fifteen of the larger makers, that is, to the amount of about £250,000 a year. The principal part of the remainder, that is, about £1,050,000 a year, is sold by about two hundred agents, who take the goods from one warehouse to another for sale.

"Of this production, about half is exported in the unembroidered state, and in the white principally; yet a large quantity is sent in the unbleached state, and is embroidered abroad, and much is figured in the white on the continent: so that it is probable that as much is figured abroad as at home, and this principally on account of wages being lower there than here, notwithstanding the low rate of embroiderers' earnings in this country. This foreign embroidery is chiefly done in Belgium, Saxony, and, until recently, Poland. The exports of bobbin-net are in great part to Hamburgh, for sale at home and at Leipzic and Frankfort fairs, Antwerp, and the rest of Belgium; to France, by contraband; to Italy, and North and South America. Though a very suitable article, yet the quantity sent eastward of the Cape of Good Hope has hitherto been too trifling for notice. Three-eighths of the whole production are sold unembroidered at home. The remaining one-eighth is embroidered in this country, and increases the ultimate value as under, viz.:

Embroidery.	Increases value.	Ultimate worth.
On power net, - - - - -	£ 131,840	£553,715
On hand net, - - - - -	1,205,860	2,583,985
On fancy net, - - - - -	78,750	105,000
On silk net, - - - - - -	109,375	175,000
Total embroidery, wages, and profit,	£1,525,825	
Ultimate total value, - - - - - -		£3,417,700

"From this it appears that, in the operations of this trade, which had no existence twenty years ago, £120,000 original cost of cotton becomes, when manufactured, of the ultimate value of £3,242,700 sterling.

"There are about seventy houses engaged chiefly in embroidering goods, and about seventy houses engaged in the preparation and sale of plain goods principally. The cash paid to small owners, for the purchase of hand nets, about equals the amount of capital created by the credit given in this market by the power net manufacturers.

"As to weekly wages paid, I hazard the following as the judgment of those conversant with the respective branches, viz.:

"In fine spinning and doubling—adults, 25*s*.; children, 7*s*.; work, 12 hours per day. In bobbin-net making—men working machines, 18*s*.; apprentices, youths of fifteen, or more, 10*s*.; by power, 15 hours; by hand, 8 to 12 hours, according to width. In mending—children, 4*s*.; women, 8*s*.; work, 9 to 14 hours, *ad libitum*. In winding, threading, &c.—children and young women, 5*s*.; irregular work, according to the progress of machines. In embroidery—children seven years old and upwards, 1 to 3*s*.; work, 10 to 12 hours; women, if regularly at work, 5*s*. to 7*s*. 6*d*; 12 to 14 hours.

"As an example of the effect of the wages of lace embroidery, &c. it may be observed, it [illegible] often the case that a stocking weaver in a country village will earn only 7*s*. a week, and his wife and children 7*s*. to 14*s*. more at the embroidery frame."

AGRICULTURE, &c.

Native Breeds of Cattle.—On reading the following report of the Committee of the Massachusetts Agricultural Society on milch cows exhibited at the Brighton Fair, on the 16th ult.. our readers will perceive that attention and care given to our native stock will be rewarded.

The Committee appointed to award premiums on milch cows, heifers, bulls, and bull calves, have attended to the duty assigned them, and report as follows:

The first premium, to Mr. John Leathe, of Woburn, for his cow, 5 years old, $25.

The second premium, to Mr. Luther Chamberlain, of Westborough, for his cow, 12 years old, $15.

The third premium, to Mr. Jacob W. Watson, of Princeton, for his cow, 7 years old, $10.

Mr. Leathe produced to the Committee a well attested certificate that his cow had given, for the months of June and July last, not less, at any time, than twenty-four quarts of milk per day, and that fourteen pounds thirteen ounces and a half of excellent butter had been made from her milk in one week. She was sold for $100.

Mr. Chamberlain also stated, in writing, that his cow was remarkable for giving milk of very superior quality; that she gave from the 10th of June to the 20th, from nineteen to twenty quarts of milk per day, and from her milk during the ten days were made seventeen pounds of butter and thirty pounds of cheese; that the quantity of milk was reduced considerably from the 10th to the 20th of September, owing to the dry weather, and particularly to the want of a regular supply of good water; that for six months past the cow has actually produced him ninety-four dollars twenty-two cents, including eight dollars forty-two cents, for which sum the calf was sold, and fatted on little more than half the milk she gave.

Mr. Watson also furnished a certificate, to which he made oath, that his cow gave from the 10th to the 20th of June from twenty to twenty-one quarts of milk per day, from which was made seventeen pounds of butter for ten days; from the 10th to the 20th of September she gave from sixteen to seventeen quarts of milk per day, and thirteen pounds of butter were made from the milk she gave during the ten days. The three cows were native breed, and had only grass feed during the time stated in the certificates.

Heifers.—The first premium to Captain Ichabod Nichols, for his heifer, with a calf by her side, $15.

Second premium, to the Rev. Mr. Briggs, of Lexington, for his heifer, 17 months old, $12.

Third premium, to Captain Hector Coffin, of Newbury, for his heifer, 3 years old, with a calf by her side, $8.

Captain Nichols was present, who, with his Son, gave such an account of his heifer of native breed, that the Committee, on examining her, had no hesitation in awarding the first premium. Captain Nichols' knowledge of milk stock is well known.

A certificate was produced, signed by two respectable men in Lexington, that accorded so well with the appearance of the animal presented, that the Committee awarded to the Rev. Mr. Briggs the second premium for his heifer of native breed.

Captain H. Coffin furnished ample testimonials of his heifer being of the best native breed for the dairy, but the calf with her being young, no trial of quantity or quality of her milk had been made, although appearances were favorable.

Harvest in Europe.—In almost every section of Europe the past season has been one of plentiful crops. Comparative peace and plenty are universally enjoyed. The quiet state of some of the European nations, and, indeed, we may say of all that quarter of the globe, may, in a very considerable degree, be attributed to the abundance of the crops: allaying the swelling and angry emotions which scarcity would excite into open violence.

The vintage in France has been very abundant, causing a reduction in the price of wines of 25 per cent.

Wheatland Agricultural Fair.—On the 12th of October, the Agricultural Society of Wheatland, Monroe county, held an annual Fair, when an address was delivered by Mr. N. Goodsell. From Goodsell's Genesee Farmer, we learn that the choice breeds of cattle and sheep exhibited did honor to the Society and exhibitors, and that the wheat fully sustained the reputation of the town for that staple article.

New Kind of Wheat.—Mr. Joseph Tracy, of Windsor, and Editor of the Vermont Chronicle, sent, in September last, a bushel of wheat to the Editor of the New-England Farmer. It weighs sixty-three pounds to the bushel, and produces forty-two to forty-four of the first quality of flour,—ripens a few days earlier than other wheat, produces less straw, and is less liable to injury from the fly. It was at first brought from Virginia.

Old Wheel and Long Thread.—Anne McQuillin, as stated some years ago by Dr. Dickson in the Parthenon, spun on a wheel which was made before the marriage of her grand-mother, one hundred and five hanks to the pound, the thread of which was so fine that it was in length two hundred and fourteen miles six furlongs and seven poles.

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[*] I cannot omit the opportunity of expressing my hope that this example will be followed by other trades, since by such means we shall obtain a body of information equally important to the workman, the capitalist, the philosopher, and the statesman.

[†] Being on an average "coarse 11-point," and nearly all is plain net.

[‡] Being on an average "fine 11-point," and two-thirds in "quillings."

Hot-bed Fences.—In England it is common to have fences of the stalks of bull-rushes and other similar plants to protect their hot-beds from cold chilling winds. A gardener of our acquaintance, residing on Long Island, makes them of the stalks of broom corn. Posts about 6 feet apart are put in the ground, and three lasts or strips of boards are nailed on, between which the stalks are perpendicularly placed. A fence from 5 to 7 feet high is thus made around the hot-beds.

Salt to destroy Trees.—Among the most useful substances in promoting health in the animal and vegetable kingdoms is salt. Like thousands of other substances, it destroys, when used in excess, those very things which it benefits when applied in moderate and suitable quantities. In excess it is destructive of vegetation, but mixed in due proportions with the soil it greatly promotes the growth and health of plants. A writer in the Genesee Farmer recommends to concave the stump of a tree, which is difficult to kill, and pour on it very strong brine.

Potatoes manured with Pine Boughs.—A farmer in New-Jersey relates to us the following experiment: Having a large number of young pine trees growing near his potatoe grounds, he gathered a sufficient quantity of the boughs to form a considerable covering to a row of potatoes which he was planting in drills. In the drill on one side of this he used lime for manure, and in the one on the other he put in marl. They were all covered with earth in the same manner, and received the same culture. On digging them, those that were manured with the pine were twice as large as the others, and double in quantity.

Planters in the Southern States estimate pine leaves, gathered early, as among the best of manures.

Cotton Crop.—Dates from Beaufort, S. C., of October 17th, represent the Sea Island cotton crop equal only to half of that of last year.

Premium Butter.—At the Pawtuxet Agricultural Fair, held in October, ult. the premium butter was sold at auction, and brought—1st premium 55 cents, 2d do. 40 cents, 3d do. 30 cents per lb.

Planting Fruit Trees.—This is one of the best months in the year for planting out fruit and forest trees. In removing them care should be taken to prevent the roots being touched with the frost, as that is sure to kill them. Tender plants and shrubs about the yards and gardens should be covered with straw or rubbish to prevent them from being injured by early frosts.—[Goodsell's Genesee Farmer.]

Beans.—These should be gathered before they have been soaked by the long autumnal rains, which greatly decreases their value, either for cooking or planting.—[Ib.]

Beets.—Beets should be taken from the ground before their crowns are injured by the frost, otherwise they will not keep well. They should be corded up in the cellar with their tops out and a layer of sand between each layer of beets—carrots and parsnips should be kept in the same way. Although the latter will endure the severity of winter if left in the ground, yet their flavor is greatly improved by managing as above, besides they are ready for use at that season when they could not well be procured from the garden.—[Ib.]

Good House-Keepers.—If there be any thing among the temporals to make life pleasant, it is in the walls of a well ordered house, where all is adjusted to please—not by its finery or costliness, but by its fitness, its air of neatness and content, which invite all who enter to taste its comforts. The woman who does not make this a grand item in all her routine of duties, has not *yet* learned the true dignity of her station—has not yet acquired the alpha of that long alphabet which is set before her; and she who despises this noble attainment despises her *best* worldly good, and indirectly despises her family, her neighbors, and the word of God. "She looketh well to the ways of her household," was spoken by the wisest man that ever lived, and will be told a memorial of all those who have been eminent for this noble character.—[Gen. of Tem.]

Poultry.—Fowls of every sort may be profitably fed on boiled potatoes and meal mixed. Hens which do not lay in the winter should have access to slacked lime, pounded bones, oyster shells, or other matter, which contains lime in some of its compounds, because something of the kind is necessary to form the shells of their eggs, which are composed of the phosphate of lime.

The following article will, we trust, be read with interest, by those who give their attention to the honey-making insect:

A Parasite of the Honey Bee (Apis mellifica.)—For a few years past, many of those people, in this vicinity, who have apiaries, have found that in the month of April, May, and June, an unusual mortality has prevailed among their bees. This circumstance has led to a thorough investigation of the cause, by those who have felt a particular interest in the products of this valuable insect; and the result has proved that this mortality has been produced entirely by a parasite.

More than two years since, one of my neighbors suggested to me his conjectures, that there was a parasite fly that was injurious to the honey bee; since which time, we have fully ascertained the fact. I have a box now before me, containing a great number of dead bees, in which may be found the parasites, in both the pupa and the perfect state. Usually the bees become sickly, and unable to fly, when the parasites are in the larva state; but they sometimes live till the perfect insect emerges from the pupa. The larva is fixed at the inosculations of the dorsal segments of the abdomen of the bee, and is hardly discoverable by the eye, unless the abdomen be dissected. The larva is white, nearly two lines in length, and very much resembles a small worm or maggot. The pupa is nearly the size of the larva, and of a reddish brown color. The perfect insect is a non-descript, and bears very little resemblance to the [*Stylops*] or [*Xenos*] or any other insect, that has been found to be a parasite of the bee or wasp. It is of the class Diptera of Lin., is little larger than the Hessian fly, but in color and form it is very unlike that insect.

Kirby, many years since, discovered that the insect (*Stylops*) was a parasite in the black-bronze bee, (*Andrena nigroœnea,*) in England, and Professor Peck afterwards found that the (*Xenos*) was a parasite in wasps, in America; but I am not aware that a parasite of the honey bee has ever been discovered till of late, and in this vicinity.

In conclusion, I would most sincerely request those who have apiaries to examine their hives during the spring and summer months, and if this parasite is discovered, to investigate the history of the insect, and if possible, to find a remedy for the injury it may produce.
Martin Field.

Fayetteville, Vt. May 15, 1833.

Memorandums about the Pea Crop. By W. Prince & Sons. [For the New-York Farmer.]

May 22 and 23, 1833. Planted all the following kinds on good ground, without manure, in rows:

June 20. Observed blossoms on the Nimble Dick, and on the Early Single Frame.

23. Blossoms on Bishop's Dwarf, (English seed).

July 8. Early Single Frame and Nimble Dick have pods fit to pick. These kinds much resemble each other.

Early Cluster and Dwarf Prolific blossoming.

August 2. Housed Nimble Dick, and thrashed them out.

7. Pulled up Botany Bay purple podded peas.

8. Pulled up Bishop's Dwarf, and put them on the fences to dry fully; they having ripened unequally, it was unsafe to house them without more airing.

13. Thrashed out Bishop's Dwarf, Botany Bay, Early Single Frame, and Lady's Finger.

16. Thrashed out Sugar Peas, Matchless Marrow, and Bergen Peas.

19. Pulled up Blue Imperial, and New Grotto Marrow, and put them on the fences—not fit to thrash.

Pulled up Spanish Dwarf, Dwarf Prolific and Early Cluster.

It appears that the Nimble Dick and Early Single Frame are the earliest of the above, and they resemble each other very much, but are supposed different varieties. They are fit for the table from twelve to fourteen days sooner than Bishop's Dwarf, or any of the kinds I have planted, and yielded more than Bishop's in proportion as 16 to 13. The Nimble Dick had pods fit for the table in 46 days from the day of planting. I believe that by picking out the earliest pods, they might have realized the story of forty-day peas.

Of Knight's Marrow we sowed two parcels, on the same day, the one from France and the other from England, and although there was in appearance no perceptible difference, yet the crop from the French seed was *ten days sooner* than that from the English seed.

You will perceive by the above statement that Bishop's Dwarf and the Dwarf Spanish vary materially as to the periods of maturity, &c. In fact, when Bishop's Dwarf was fit for the table, the Spanish Dwarf had but just commenced expanding its blossoms. The reason that many have considered them as equally early is this: a great quantity of the peas sold last spring for the *former* were of the *latter* variety, and a number of instances in proof of this fact have fallen under our own observation.
Wm. Prince & Sons.

Linnæan Botanic Garden, Flushing,
Sept. 30, 1833.

Average Velocity of Winds.—From the average rate of sailing of ships during long voyages through various seas, as in the China trade, and from other data, it is estimated that the average velocity of the wind, near the surface of the ocean, is equal to eighteen miles an hour throughout the year.

Showers of frogs, fishes, &c. arise from water-spouts, or spiral eddies, [whirls,] by which small portions of the waves of the sea and ponds of water, (in a state of division,) with their contents, are forced to an elevation; and thus being transported to a distance, and there falling, produce these strange precipitations.

NEW-YORK AMERICAN.

OCTOBER 26, 28, 29, 30, 31, NOVEMBER 1—1833.

LITERARY NOTICES.

We present below the first of a series of letters, which we hope from time to time to publish, from the pen of a well educated and intelligent American who, desirous of seeing for himself those parts of his own country, especially the northwestern territory and the great valley of the Mississippi, which, except from Mr. Flint's Geography, he, in common with the great mass of dwellers upon the seaboard, only knows from the description of foreign and too often prejudiced travellers, is about to make an extensive tour. He will note for the information and instruction of others, the impressions produced upon his own mind by his visit to these noble regions of our country; and we shall, we trust, impart an additional attraction to our columns, by rendering them the medium through which these letters will appear.

Easton, Pa. Oct. 17.

MY DEAR J.

My ride has not as yet furnished an incident worthy of being entered into the journal of the most unambitious tourist. Yet still I take the first opportunity of fulfilling the promise given, when starting on the wide excursion I meditate, of writing to my friends from the different stages of c route, and describing its features with sufficient minuteness for those who take an interest in my letters, to accompany their writer in his wanderings. With which of my friends, with whom breathing, my dearest, can I better commence my little narrative than with one who will only regard its details with the eye of affection—unmindful alike of their want of intrinsic interest, and the unattractive form in which they may be conveyed, so that they be but a faithful record of my wayfaring.

Our route hither from New Brunswick (or *Rougemont*, as some one proposes calling it from the colour of the soil,) was as uninviting as a rainy disagreeable day, bad roads, and a country neither fertile nor picturesque, could make it. Occasionally, indeed, a glimpse of the Raritan gave animation to the scene, as, sparkling restlessly between its cold brown banks, it rushes like an ill-matched bride from their dreary embrace to sully its pure waters in the marsh through which it passes to the sea. These, however, lasted but for a short time, and for the remainder of the ride but few natural objects presented themselves to induce one to dispute that quaint Indian tradition which avers, that when the Manitou had finished making the rest of this mighty continent, he slapped from his fingers the mud and gravel which now form this part of New-Jersey.

We reached a straggling village, called Jacksonville, about nightfall, at a low roofed unpretending-looking stone tavern, and finding that no one made his appearance at the call of 'House,' proceeded ourselves at once, like staunch travellers and true, to unharness and blanket our wet and weary horses. The generous animals seemed really to appreciate our consideration in attending to their comfort before consulting our own; and I am convinced, that the cordial whinning of the one I had ridden when leaving him at last to his supper, while I went to seek my own, has established an inviolable friendship between us for the rest of the journey. We had a capital supper—of which buck-wheat cakes, not quite so large as a New-York grass-plot, formed no mean ingredient—and slept in sheets of snow. To this auspicious characteristic, their properties, in other respects, bore a resemblance, as I afterwards discovered, which might readily be dispensed with. I awoke at dawn, with rheumatic pains in every part of my bones, and found, what had escaped me the night before, that every particle of the covering of my bed was as wet as if I had like a politician, who changes without pausing on the fence, been transferred at once from the wash tub to my bed, without undergoing the dilatory process of drying. I was glad to get at once into the saddle, and it took a warm trot of a dozen miles to relax my aching muscles and make me anticipate my breakfast with any thing like satisfaction.

The morning, though cloudy, broke beautifully. The country, as we approached the borders of Pennsylvania, increased in interest. Richly wooded hills, with here and there a fertile slope evincing a high state of cultivation, shone out beneath the fitful sky. The streams from the uplands were more frequent, and their currents flowed with heightened animation. The farm-houses too became more substantial in appearance; and their gray-stone fronts, standing sometimes in a clump of sycamores aloof from the road, betokened the quiet comfort of their inhabitants. The roads indeed became worse than indifferent—but that, though a sudden rain soon set in, did not prevent our enjoying the clouded but still beautiful landscape.

We crossed the bridge over the Delaware to Easton at about two o'clock, and driving to the famous hostebrio of Mr. White, the Cruttenden of these parts, were soon safely housed in his hospitable establishment. Having breakfasted at 11, we ordered dinner at five, and strolled out to see the lions of the place. The roar of a waterfall was the first thing which attracted my notice, and following the sound I soon found myself near the famous dam over the Lehigh, where, at its junction with the Delaware, back water is created for the sake of supplying the Lehigh canal. The pond, thus formed, which with its abrupt banks, and frowning limestone cliffs wooded to the top, might almost pass for a small natural lake, is filled with small craft,—the lubberly-looking canal-boat and sharp clean-built but still burthensome ark lying moored by the shore, with numerous light skiffs drawn up near them. I easily procured one of the latter, and shooting under the chainbridge which spans the Lehigh, the wind and current carried me in a moment past stone wharves heaped with anthracite to the brink of the dam. The sudden slope of the water here had an awkward look about it which reminded me vividly of a peep I once took from a row-boat into "the Pot" at Hell-gate, when its screwing eddies carried the eye with a strange fascination deep into the boiling cauldron. Bending heartily to my oars, I was glad to leave the glassy brim that sloped so smoothly to destruction.

The operations of an ark working up against the rapid current of the Delaware next caught my attention. She had four men to manage her—the roughest, hardiest looking set of fellows I ever saw, broad shouldered and brawny, with complexions like copper, and having no covering to their heads, but coarse curly hair, matted so thick that it looked as if the stroke of a sabre might almost be turned by it. The strength and agility of those fellows is very striking as they stride along the gunwale with their long poles, and twist themselves into all sorts of positions while urging their unwilling craft against the foaming current. After they had gained and passed the lock, and floated into the basin where my boat was lying, I could not help rowing near theirs to examine their iron frames more narrowly. I was just making up my mind that such a collection of bold reckless impudent faces as were borne by these worthies, I had never seen, in my life before, when my surmises in physiognomy were fully confirmed by a volley of billingsgate, which one of them let fly at me. It being perfectly in character I was of course much amused at it, and, by gently lying on my oars and looking at him, incensed my amiable acquaintance to a degree that was irresistibly ludicrous. I waited till he was exhausted, and when he wound up by 'damning my spectacles,' I reflected with Dr. Franklin, that it was not the first time they had saved my eyes; and mentally consigning the fellow to the tender mercies of Hamilton and Trollope, pulled for the berth of my little shallop, and soon after regained my quarters.

I think you would be much pleased with Easton. The situation of the village itself is eminently happy—almost picturesque—and the country around it delightful. Imagine a lap of land, not quite a mile square, embosomed among green hills bounded by two fine rivers and a pretty mill stream—the straight rectangular streets now terminating with a bold bluff, descending so immediately to their very pavements that its rocky sides, skirted with copsewood, seem to overhang the place, and again either washed by one of the streams that determine the site of the town, or facing some narrow ravine which leads the eye off through a wild vista to the open country. Add the remarkably flourishing and well-built appearance of the village itself, with its two bridges, and the extensive works of the Morris and the Lehigh canals adjacent, and you have almost as favourable a combination of rural objects and city improvements as could well be effected on one spot. The chief buildings are the County Court-House, situated in a fine square in the centre of the place, and the La Fayette College, which, from a commanding position over the Bushhill, faces one of the principal streets. The latter is a *manual labor* institution, (a term I need hardly explain to you) recently incorporated, and likely to flourish under the energetic superintendance of the Rev. Mr. Junkin, its able principal. Easton, as you are probably aware, is celebrated for the rich mineralogical specimens found in its vicinity. The salubrity of the place, as I am informed by an eminent physician, is remarkable; and one can readily believe in its exemption from most of the fevers of the country, from the fact of there being no woodcock ground within five miles of the Court-House. The site was chosen and the town plot laid out by Penn, a town-monger, who, if he did cut his plans with a scissors from paper, as a recent foreign traveller has hinted was the case with regard to Philadelphia, had certainly a happy knack in adapting the model to the locality. The descendants of the great colonizer are still said to own property in Easton, while the peaceful members of his brotherhood in our day bless his memory when turning up the jasper arrow-head within the precincts of the village, and thank Heaven for the teacher whose gentle counsels withdrew forever from this lovely valley the red archers that shot them.

Eagerly as I am now treading on the steps of that fated race to their fleeting home in the far west, with what emotions of pleasure shall I not count every returning mile that will bring me near you. H.

SELECT JOURNAL OF FOREIGN PERIODICAL LITERATURE, No. IV. Boston: CHAS. BOWEN.—This number has capital selections; but we have only time, in awarding this general praise to it, to refer to one of them—a review from the British Monthly, of a report by the Institution of France *in favor of* animal magnetism. This is the first we have heard of such a report, and our surprise is great indeed. We adopt concerning it and the whole subject, the remarks of the American Editors of the Select Journal:

The following, though not very well written article, contains, we believe, a fair account of the report lately made to the French Academy of Sciences by a committeee of that body on the subject of Animal Magnetism. This report seems to us one of the most extraordinary phenomena of the age. About sixty years ago the pretended art of Animal Magnetism had its origin in the tricks of a charlatan Mesmer. In 1784, at Paris, the subject was thoroughly examined by commissioners, appointed by the king of France, of whom our countryman Dr. Franklin was one; and the fraud was considered as detected. The supposed art, however, notwithstanding the baseness of its origin, and notwithstanding this discomfiture, still retained credit with many, and found disciples and defenders, particularly in Germany. For a brief account of its history and character, we would refer our readers to the "Encyclopædia Americana." It has now, it seems, revived in full glory; and we have a committee of a very celebrated scientific body testifying to effects unquestionably *miraculous* in their character. Physical power, are represented as enabling men to see without the use of their eyes, and as conferring the gifts of supernatural divination and prophecy.

Whatever one may believe of Animal Magnetism, the report of the Committee of the Academy of Sciences cannot be read without amazement. It is a document which will mark the age and country in which it was produced. Its existence is a fact hard to be accounted for: and in proportion as it may be better explained, will throw new light upon the occasions, laws, and character of human belief, or rather of human credulity. In accounting for the statements which are made, we may suppose that certain physical effects were, in some instances, produced by operating upon the imagination and feelings of those who submitted to be "magnetized." Collusion, fraud, deception, in various forms, afford another obvious solution. He who has witnessed the tricks of a juggler may easily believe that some of the most extraordinary results described might have been brought about without the agency of any unknown power. Whoever may relate them, not as a mere witness, but as giving assurances that they were effected by the supposed cause, should consider that the first point which every philosopher will demand to have established is his own veracity; and that this must be established upon plenary and unquestionable evidence. We may further remark that in witnessing an exciting phenomena, especially in company with others, there are few whose observation and memory are not affected by their feelings and imagination. It is somewhat rare to find a cool observer and correct narrator, who, when others about him are full of wonder, will submit to the self-denial of so telling his story as to reduce a marvel to an ordinary event. Yet this often may be done by the mention of one or two circumstances which it is easy to keep out of sight.

It seems worth consideration whether the delusion of which the following article gives an account, is not in a great measure to be referred to the character of the times, and to the entire unsettling of the belief of many upon the most important subjects. Throughout a large portion of the European world, nothing in the higher departments of thought can be considered as established and generally recognized as true. One metaphysical system with its pretended revelations has swept along after another. Out of the sphere of the mathematical and physical sciences, men's minds have not been disciplined to habits of clear reasoning and correct judgment. But credulity is the natural attendant of unfounded skepticism and uncertain opinions. The believer in an intelligent Divinity can hardly deny any powers, however new or strange,

which may be claimed for Nature. Animal magnetism has in fact been connected with the pantheistic system, which represents all beings and all powers as portions and attributes of its unconscious God, and in their totality as constituting that God. The magnetized soul disengaged from the body is brought, it is said, into a nearer connexion with the universal Being of which it is a part, and thus discerns the secrets of nature and of fate. He who has received the theory, is prepared for receiving the application of it.

The following is the mode in which the process of magnetizing is carried on:

The magnetizer has two ways of operating; that by his hands in contact with the patient, called *manipulation*, and that in which he uses certain media of intercommunication with the patient. In the process by manipulation, the author says, that the usual practice is to move the hand, the palm and fingers being on some part of the patient, in one direction downwards, from the head to the feet. Then the operator is to return, throwing the hands round in a semicircle, turning the palms outwards, in order that the effect of the direct or downward stroke of the hand may not be disturbed. It would appear, from the cautions of all experienced magnetizers, that it is contrary to all the laws of this great remedy to attempt to direct the hand in a course contrary to that which was first selected; so that bringing the hands up direct from the feet to the head, after they had been brought down from the head to the feet, would neutralize all the efficacy of the first friction. Mr. Colquhoun goes on to say:—

If we attempt to operate with the back of the hand, no effect whatever will probably be produced upon the patient. If, in the course of this process, the hands or fingers of the operator are made actually to touch the body of the patient, it is called *manipulation with contact*. If, on the contrary, the operation is conducted at some distance, it is called *manipulation in distans*.

The *manipulation with contact* is of two kinds. It is accompanied either with considerable pressure, or with light touching; manipulation with *strong*, or with *light* contact. The manipulation with strong contact is certainly the most ancient, and the most universally prevalent mode of operating, and traces of it are to be found in almost all ages and countries. In manipulating with light contact, the hand, indeed, is conducted very lightly along the body of the patient; but the magnetizer must perform this operation with the utmost energy, and always have the desire of applying strong pressure to the body of the patient.

The *manipulation in distans*, is applied at a distance of from generally two to six inches from the patient's body. In the case of very susceptible persons, it is performed at a still greater distance. The effects of this mode of manipulating are less intense than those produced by actual contact, and, besides, it requires a greater energy of volition on the part of the magnetizer. It is, however, frequently employed in magnetizing very irritable patients, who cannot endure any stronger method.

It would be tedious to enumerate and describe all the various kinds of manipulation detailed in elementary works on this subject. They may all of them, however, be combined, according to the skill and judgment of the magnetizer, who will vary his modes according to the effects produced, and the degree of sensibility evinced by the patient.

We now extract some of the cases, in which the Committee of the Academy—among whom Majendie and other well known names figure—witnessed the the effects of magnetism:

One of the most singular and overwhelming of the cases which came under the head of the more recent and important ones, is that of Jules Cloquet, the well known anatomist in Paris, who had, of his own accord, sent in an account of this case to the surgical section of the Academy. He was no magnetizer, but, very likely, laughed and ridiculed the art with as much asperity as the most determined of its enemies. This gentleman, it appears, was called, on the 8th of April, 1829, to see a Mrs. P., then residing at 151, Rue St. Denis, Paris. He found that she had cancer of the breast, and that nothing but extirpation of the disease could effect a cure. The lady, at this time, had been attended by the physician whom she had long employed, and who was in the habit of magnetizing her into a sleep, or rather somnambule, (for there is a great difference between them,) to produce an oblivion of her sufferings. The physician, M. Chapelain, was sensible that no other hope of saving his patient from a miserable fate remained than that held out by M. Cloquet, and he proposed to the surgeon that he should perform the operation whilst she was in a state of magnetic sleep. The surgeon agreed to it, and the operation was performed accordingly. The patient knew nothing whatever of the proceeding, but was kept asleep for two days, and upon being awoke, and informed of what had taken place, she experienced says M. Cloquet, a very lively emotion.

The power which, it was represented, some somnambulists possessed of seeing perfectly through their closed eyelids, formed the subject of some very close and attentive examinations. The result was, that the commissioners were satisfied, for they looked on, that in one case a patient, in this state, was able to read a book by seeing it through his eyelids! But this was not all; for although his somnambulism continued, yet the patient became very much fatigued, and was invited to play a game at *écarté*, of which he mas very fond. He showed amazing dexterity all the while, and always beat his opponent.—It is to be remembered, that during all this time, the patient was in a state of somnambulism, and, of coure, was unconscious of what he was doing.

Next is a case of paralysis cured according to his own prescriptions:

Paul Villagrand, a student at law, who was paralysed as to half his body by a stroke of apoplexy in the country, was admitted into La Charité, at Paris, after having been treated in all manner of ways at home for sixteen months. Now, the committee actually went to the bed where this patient lay, in the hospital, and saw the physical marks, as they were strongly indicated, of his disease.

They found that the lower left limb was much thinner than the right, that the right hand was closed much more firmly than the left, that the tongue when drawn out of the mouth was carried towards the right commissure, and that the right cheek was more convex than the left. Paul was then magnetized, and the result is thus stated in the report:—

"He recapitulated what related to his treatment, and prescribed that, on the same day, a sinapism should be applied to each of his legs for an hour and a half; that next day he should take a bath at Bareges; and that, upon coming out of the bath, sinapisms should be again applied during twelve hours without interruption, sometimes to one place, and sometimes to another; that, upon the following day, after having taken a second bath of Bareges, blood should be drawn from his right arm to the extent of a *palette* and a half. Finally, he added, that by following this treatment, he would be enabled on the 28th, *i. e.* three days afterwards, to walk without crutches on leaving the sitting, at which, he said, it would still be necessary to magnetize him. The treatment which he had prescribed was followed: and upon the day named the 28th of September, the committee repaired to the Hôpital de la Charité. Paul came, supported on his crutches, inte the consulting-room, where he was magnetized as usual, and placed in a state of somnambulism. In this state, he assured us, that he should return to bed without the use of his crutches, without support. Upon awaking, he asked for his crutches,—we told him that he had no longer any need of them. In fact, he rose, supported himself on the paralysed leg, passed through the crowd who followed him, descended the step of the *chambre d'expérienees*, crossed the second court de la Charité, ascended two steps, and when he arrived at the bottom of the stair he sat down. After resting two minutes, he ascended with the assistance of an arm and the balustrade, the twenty-four steps of stairs of which led to the room where he slept, went to bed without support, sat down again for a moment, and then took another walk in the room, to the great astonishment of all the other patients, who, until then, had seen him constantly confined to bed. From this day Paul never resumed his crutches."

Last, and most incredible of all, a case where magnetism had imparted to its object, both the gifts of seeing into the human frame, of specifying exactly the seat and nature of the malady under which another person was laboring, and that of being able to prescribe—without any previous knowledge of medicine—the appropriate remedies by their appropriate technical names, and in the just proportions: and all this is believed by men of high intellectual endowments:

The reporter was called in to assist at a consultation, and he did not neglect to take advantage of this new opportunity of adding to what the committee had already seen. He found the patient to be a young married woman, Madame La C——, having the whole right side of the neck deeply obstructed by a great congeries of glands, close upon each other. One of them was opened, and emitted a yellowish purulent matter.

Mademoiselle Céline, whom M. Foissac magnetized in presence of the reporter, placed herself in connexion with this patient, and affirmed that the stomach had been attacked by a substance *like poison*; that there was a slight inflammation of the intestines; that, in the upper part of the neck, on the right side, there was a scrofulous complaint, which ought to have been more considerable than it was at present; that, by following a soothing treatment, which she prescribed, the disease would be mitigated in the course of fifteen days or three weeks. This treatment consisted of some grains of magnesia, eight leeches applied to the pit of the stomach, water-gruel, a saline cathartic every week, two clysters each day, one of a decoction of Peruvian bark (kina,) and, immediately after, another, of the roots of the marsh-mallow, friction of the limbs with ether, a bath every week; food made of milk (*laitage*,) light meats, and abstinence from wine. This treatment was followed for some time, and there was a perceptible amelioration of the symptoms. But the impatience of the patient, who did not think her recovery proceeding with sufficient rapidity, determined the family to call another consultation of physicians, who decided that she should again be placed under mercurial treatment. From this period the reporter ceased to attend the patient; and he learnt that the administration of the mercury had produced very serious affections of the stomach, which terminated her existence after two months of acute suffering. A *procés-verbal* upon opening the body, signed by M. M. Fouquier, Marjolin, Cruveillier, and Foissac, verified the existence of a scrofulous or tubercular obstruction of the glands of the neck, two small cavities full of pus, proceeding from the tubercles at the top of each of the lungs; the mucuous membrane of the great cul-de-sac of the stomach was almost entirely destroyed.

Library of Standard Literature—the Works of Burke, 3 *vols.* 8 *vo.* *New York.* Geo. Dearborne. It is only a little time ago since we spoke of this splendid enterprize, of which we have now the first fruits from the press of Mr. Dearborne. The works of Burke, however politicians may cavil about some of his principles, are well entitled to lead in any series of publications, intended for the future as well as the present, for standard use and reference. They are here presented in a form which combines economy order and beauty. The arrangement of the contents is chronological. The double columns admit of compressing into three, materials which usually occupy seven or eight, volumes; while the clearness of the type and paper obviates in a great degree the usual objections against small print. We have had occasion in several of the above notices, to praise the beauty of Boston publications. We are well pleased to be able to say of this, that it authorizes the expectation that our New York publishers will not long remain behind their Eastern competitors.

Sermons on Various Subjects; by *Henry Colman*, of Salem, Mass.; 1 vol. 8vo: *Boston, Lilly, Wait & Co.*—This volume comes recommended externally by peautiful paper and typography. Its contents—bating certain theological opinions about which readers will differ—are worthy, by their style, their earnestness and their tendency, of all the luxury bestowed on them. Mr. Colman was for several years the pastor of a Congregational Church in Salem. Ill-health compelled him to renounce a career which seems to have been one of choice and feeling; and there is no part of the volume before us better adapted to conciliate the esteem of readers than his valedictory discourse on taking leave of his congregation, and a subsequent address on the induction of his successor.

The Testament, stereotype edition: *Boston*, Lilly, Wait & Co.—Another sumptuous specimen of the work of Boston publishers. The New Testament, in one volume, on beautiful paper, with a large, clear, open type, and the binding in keeping with all the rest.

Silvio Pellico.—Who that has read the memoirs—the affecting and improving memoirs of this victim of Austrian tyranny—can forget the companion of Pellico's harsh imprisonment at Spielberg—*Maroncelli?* Loaded with fetters—plunged in a subterranean dungeon—and counting long and weary years almost shut out from the light of Heaven, from the face of nature, and the sweet intercourse of his fellow creatures—fortitude, the mind conscious of right, and hope, immortal hope, which sustained his spirits, and almost his cheerfulness, were unavailing to ward off the physical effects of such tyranny; and the body yielded, while the soul remained unshaken. Confinement, low diet, and the unwholesome vapors of a dungeon, induced a disorder in the knee, which increasing rapidly in malignity, left no alternative at last but the amputation of the limb. This was effected—how and by what hands we will not now stop to say—but our readers will not forget the beautiful incident, extracted in our notice of the book, of this suffering individual's presenting to the operator who had just hacked off his leg, a flower—a rose that stood hard by—as the only token that Austrian policy had left him, of gratitude.

Well, Maroncelli—persecuted, imprisoned, maimed and exiled, because he felt and wrote like an Italian worthy of his glorious native land—Maroncelli is now among us; and here will not fail, we may say without hesitation, to find friends, fortune, country. The amusement and ornament of happier hours is now turned into a resource against adversity; and attached as Director of the Choruses to the Italian Opera Company, Signor *Maroncelli's* cultivated taste for and knowledge of music is to be made available to his support. This in itself is something; but a scholar and a poet, he will also give instruction in the language and literature of Italy; and those loved accents which he is no more permitted to breathe on his native soil, he will seek to impart here in this free land, to those who will not relish the instruction less, that it comes from the mouth of one who put life and all at hazard for Italy.

Although we have not authority from M. Maroncelli to say what we have done, and no knowledge of the details, if they be yet matured, of his future plans, we could not refrain from stating thus much concerning him and his general purpose.

The Oriental Annual: London.—This new candidate for favor among the annuals was sent to us by Peabody & Co., who were the first, as we are informed by them, to import it. It is Indian in all its attributes; the engravings, 24 in number, are all from scenes in India; the descriptive portion is by the Rev. Hobart Caunter; and in all respects of mechanical execution it may compare advantageously with any other annual.

Village Belles, 2 vols.—We have not in a long time met with a novel so much to our fancy. It is written without pretension, with great knowledge of the world, of human nature, and the ordinary motives of action among men and women of real life, and in a free, spirited, and sketchy style, that gives effect to the good sense, good feeling, and good aims of the writer. Our readers cannot go wrong in getting these volumes.

We have made one or two extracts, which wlil be found at page 702.

Tait's Magazine for September, has a article on Hamilton's *Men and Manners in America*, in which the cause of America is warmly espoused. The following illustration is good:

"Imagine a battered old beau quizzing a ruddy growing boy for his brown holland pin before, the three rows of brass sugar-loaf buttons on his jacket, the redness of his hands, the carelessness of his carriage, his fondness for tarts, his contempt of the higher luxuries of turtle and venison; and you have the sum and substance of all English criticisms on America."

SUMMARY.

It is mentioned in a Philadelphia paper, that Com David Porter is shortly expected home on a visit to his family.

The ship Ysidra, reported to have been lost on the coast of Spain, is insured at various offices in Wall street to the amount of $80,000, viz. on the cargo of Cocoa $30,000; on gold and bullion $30,000, and on the ship and freight $20,000. The amount on the ship is less than her value, and that on her cargo, though covering cost, is not half equal to what the value would have been, had the cocoa been landed.

The Captain of the brig Montilla, arrived just now from Malaga, states that when out about one hundred miles South West of Cadiz, the Ysidra started a butt and leaked so badly that the crew took to the boats and left her. The probability is therefore that the loss will be total.

Appointments by the President.—Peter V. Daniel, of Richmond, Virginia, to be Attorney General of the United States, in the place of Roger B. Taney, resigned.

The Charleston Patriot of the 17th inst. says, we understand that the *Bank of South Carolina* of this place have declined receiving the United States Deposites.—[Gazette.]

Naval.—It will be seen by reference to our marine head that the U. S. sloop of war Warren, Capt. Cooper, from Rio Janeiro, was spoken on Tuesday last going into the Delaware.—[Gazette.]

The passengers who left Philadelphia at 10 o'clock yesterday morning, arrived at 5 in the afternoon.—They were on the road between Bordentown and Amboy only one hour and fifty five minutes. The locomotives exceed all former inventions for rapid and safe travelling; and, when this line is completed to Camden, the intercourse between the two great cities of the United States, will afford facilities to men of business and pleasure, unequalled in any part of the world.—[Gazette.]

There was a slight fall of Snow at Troy on Sunday last.

The Helvetia one of the Hudson Whale Company's ship sailed from that place on Monday, for the Pacific Ocean, on a three years voyage. She is commanded by Capt. Cottle.—[Gazette.]

Steamboat Disaster.—We learn from the New Orleans Advertiser that the steamboat Columbia, Captain Laurent, sunk about twenty miles above New Orleans, on the morning of the eleventh inst., with a full cargo of more than nine hundred bales of cotton. One engineer and two negroes are supposed to have gone down with her.

Steamboat Accident.—On Saturday afternoon, the Champlain, Capt. Gorham, on her passage from Albany, when between Poughkeepsie and Newburgh, broke her larboard water wheel shaft, and before the engine could be stopped, the shackle bar gave way in two places, breaking the wood work of the boat considerably, and it is supposed also cracking the cylinder. The loud crash, brought all the passengers on deck, who at first took it to be an explosion of the boilers. She worked down to the City with her starboard engine, and arrived about eight o'clock, the accident detaining her only two hours. It will take a considerable time to repair her, and it is not probable from the lateness of the season that she will run again before spring.—[Standard.]

On Tuesday next the law of the Legislature requiring a new mode relative to Copartnerships will take effect. After that period, according to an act passed by our Legislature, all former partnerships, who carry on business under the ancient names of persons no longer living or interested, will be required to take the names of the partners actually doing business, and no other. The law, as a whole, is a good one, although, like most new acts, will bear rather hard. Many old firms, which have been familar to the public, enjoy a high credit, and which have been long identified with the character and credit of the city, we regret wlll have to be dropped.

Steamboat disasters in Canada.—During the late gale the steamboat St. George broke one of her shafts, and was towed into port by the Great Britain. The steamboat John Bay, which plied between York and the head of the Lake, was driven ashore near the Credit, and it is feared will prove a total wreck. The new and elegant boat Britain sunk at Kingston. The new steamboat William Avery, of Oswego, was towed into Kingston by the Great Britain, which boat fell in with her in distress.—[Albany Argus.]

Proclamation by William L. Marcy, Governor of the State of New York.

During the present year, the beneficent Ruler of the Universe has been pleased to dispense, in a liberal measure, his bounties and his blessings, to the people of this State. Peace and tranquility have prevailed throughout its whole extent; our free institutions, securing to us the full enjoyment of our civil rights and religious privileges, are unimpaired; our establishments for education continue to dispense the treasures of knowledge to the rising generation; our harvests have been unusually abundant; and industry, in all the diversified pursuits of our citizens, has been bountifully rewarded. While many other parts of our common country have been afflicted with a most destructive pestilence, the inhabitants of this State have been exempted by a kind Providence from its visitation, and signally blessed with an unwonted degree of health. Entertaining sentiments becoming a moral and religious people, it is our solemn duty to express in a public manner, the homage and gratitude due to our Divine Benefactor, for the manifold favors he has been pleased to bestow upon us:—

I do, therefore, in conformity to usage, most respectfully recommend, that *Thursday, the fifth day of December next*, be observed as a day of public Prayer and Thanksgiving by the people of this State.

Givon under my hand, and the privy seal of the State
L. S. at Albany, this twenty eight day of October,
one thousand eight hundred and thirty three.
W. L. Marcy.

[*From the Charleston Courier.*]

Important Salvage Case.—*Wm. P. Lea vs. The Ship Alexander.*—We understand that the following points were decided by the District Court, in this case, on Saturday last.

1. That a Pilot going on board of a ship ashore 45 miles from the Bar of Charleston, being within his pilotage ground, cannot claim salvage, although he saves the ship—but may be entitled to extra compensation.

2. That to entitle the Pilot, in such a case, to claim salvage, he should have distinctly declared on going on aboard, that he was there as a salvor and not in the capacity of a pilot, in order that the master might make his election in which character he would receive him.

3. That under the City Ordinance, regulating pilotage, the boarding of a vessel within 40 miles of the land, was within the regular duty of the pilot: but in consequence of extra services, he was entitled to extra compensation—which the court awarded to the amount of $400.

From this decree the libellant has appealed.

J. L. Wilson & T. S. Grimke, Esqrs. for libellant. C. G. Memminger and S. G. Barker, Esqrs. Contra.

We are informed that it turned out in evidence that the ship was not insured.

Little Rock. [Ark.] Sept. 18.—The Arkansas river has risen 12 or 15 feet within the last ten days, and is still rising fast. It is now at a stage to admit of navigation by boats of the largest class.

For more than two weeks past, we have been almost constantly visited by cloudy and rainy weather, and during a considerable portion of the time, the rains have been very heavy. Within the last two or three days, the sun has occasionally made his appearance, but at present, we have but little prospect of fair weather.

Interments at New Orleans—*Catholic*—Oct. 10th, 12; 11th, 10; 12th, 24; 13th, 10; 14th, 14—70. *Protestant*, Oct. 10th, 9; 11th, 7; 12th, 6; 13th, 2; 14th, 7—31—Total 101.

The late fair of the American Institute was much more *productive* than any former exhibition, the receipts amounting, as we are told, to over $2540; which is $600 more than received at any former fair. More than 10,000 tickets were sold, and as the ladies, members of the institute, and a great number of other persons, were admitted gratuitously, it has been supposed that more than 40,000 persons visited the exhibition. We have no doubt that a still larger estimate would come nearer the truth.—[Courier.]

A German Priest walking in procession at the head of his parishioners, over uncultivated fields, in order to procure a blessing on their future crops, when he came to those of an unpromising appearance, would pass on, saying, "Here are prayers, and singing will avail nothing; this must have manure."

[*From the Commercial Advertiser.*]

American Treaty with Siam.—We subjoin an article from the Singapore Chronicle of the 6th of June, which contains, we believe, the only provisions of the treaty between our government and that of Siam, recently negotiated by Mr. Roberts, that have transpired. In fact it gives, we have reason to believe, all the information respecting it which the public can be anxious to know.

The American sloop of war Peacock, Capt. D. Geisenger, arrived at the Bar about the latter part of February last, having on board Edmund Roberts, Esq. as Envoy from President Jackson to Cochin China and Siam. Previous to the vessel's arriving at Siam, the Embassy had been at one of the out ports of Cochin China, but could accomplish nothing. They were, however, well received at Siam: two large war boats were sent outside the bar to bring Mr. Roberts to Bankok, the Peacock being too deep to pass over it. The party that came up consisted of eleven persons: Mr. Roberts, Capt. Geisenger, the Doctor, Mr. Morrison, jr., of Canton, as Private Secretary and Chinese translator, two or three Lieutenants, and the residue Midshipmen. They occupied one side of the factory built for foreigners.

Mr. Roberts had his letter from the President of the United States to the King of Siam—it was open, and having no large seal on it, the Siamese could scarcely believe it to be a genuine letter from the President; but the Peacock laying outside the bar, with 200 white men on board, was a reality, therefore all must be real.

Mr. Roberts proposed to form a treaty of friendship and commerce, at which the Siamese made no objections. He endeavored however to make a more advantageous one than the English did, but that, the Siamese said, could not be done; they would agree to allow the Americans to trade on the same footing as the English, but more could not be granted.—After some delay and trouble, a treaty was drawn up after the Siamese fashion; but then the fight for alterations, amendments, &c. Mr. Roberts had an audience of his Majesty, and only one. The treaty is written in the Siamese, Chinese and Portuguese languages, and commences in the same style as the English one, with "Somdet Phra Puttie Chan Ya Hua," &c., which is translated in the treaty, "the great and magnificent King," instead of the literal godlike titles which are alike applied to their God and their King. Mr. Roberts was very anxious to obtain the treaty sealed in duplicate, in order to forward one copy to the United States from Batavia or elsewhere, and after having gone to the trouble of drawing three copies, the foolish old Praklang could not be induced to sign the duplicate, being fearful, it is presumed, that Mr. R. only wanted to sell the duplicate to some other State! so that Mr. R. went away with only one copy sealed. The Praklang was reasoned with, and told that were he to sign a hundred copies, no harm could befall the country, all being of the same tenor and date; but it was of no avail.

The presents given by Mr. Roberts did not produce the desired effect, though valuable in themselves. Indeed, to a Court, like Siam, they were rendered in some sense valueless through their ignorance. The presents to the King consisted of a pair or two of beautiful watches set with pearls of some value, some silver baskets and abundance of China Silks. To the Praklang also, Mr. Roberts gave presents to a good amount, but he did not visit any of the interior Princes. The amount of the presents might be about 2000 to 2500 dollars, while the returns consisted of a little sugar, sticlac, pepper, tin, gambenge, benjamin, Anguella wood, Sapan wood, and inferior Cardamons—the whole of which might be worth 1000 or 1100 dollars. The Siamese knew the presents were bought in China, which did not please them much, and it is said, that at one time they were not disposed to accept them. The original presents intended for the Cochin Chinese and Siamese Courts were sent out from America in a separate vessel, but she had not arrived in China ere the Peacock left. But this the Siamese would not credit.

Mr. Roberts inserted one article in the Treaty to the effect that if a citizen of the United States contracted debts in Siam and was unable to pay them, the creditors were to take whatever he possessed, and then to discharge him;—they are not to detain a citizen in Siam contrary to his inclination,—or something to that effect. This the Siamese agreed to, provided a similar clause was inserted in their favor, and the article, at present, stands thus: 'If a Siamese buy from a citizen of the United States, or owes him money, he must pay the citizen, if he possesses the means; but if he has not, the citizen is to take what he has got, and give him a discharge. The same with respect to the citizen of the United States."

This is liberty and bankrupt law with a vengeance. It is to be regretted that such a clause was inserted at all; for, from the manner of transacting commercial business at Bankok, it is almost impossible for the foreign merchant to get into debt with the Siamese. The former is obliged to sell his goods generally on a credit; but not so the Siamese merchant, his produce. If, therefore, a Siamese dealer be inclined to take advantage of the above article, he may purchase goods from a foreign merchant, pay his former debts, and if there be any residue, hand it over to the merchant, who, by the treaty, is bound to give him a discharge! This was explained to Mr. Roberts, and when too late he endeavored to cancel the clause altogether; but the Siamese would not *yom* (consent.) Mr. Roberts consoled himself, however, by saying that another article, inserted in the treaty, counteracts the above, which states that the Americans are to enjoy the same privileges as are granted to the most favored nations, and that if a Consul be allowed to reside at Bankok, from any European nation, excepting the Portuguese, the Americans will be permitted to have one also.

Mr. Roberts was desirous of inserting in the treaty a clause by which liberty should be granted to send a Consul; but the Praklang would not consent, though the King is said to have told him to agree to it. The Praklang informed Mr. Roberts that Capt. Burney had asked permission for an English Consul to reside at Bankok, but was refused. How far the signification of the phrase "most favored nations"—extends, is a matter of inquiry; it may be applicable only with regard to any alteration in duties, though the article regarding debts would still continue in effect.

The Peacock left the Bar of Siam for Singapore, on the 6th of April, after having remained upwards of forty days.

Commercial Telegraphs.—The following extract of a letter from Paris of 5th September, to one of the London Journals, gives the first intelligence we have seen of this new enterprize of commerce in France. The effort of ministers to crush it, might find some countenance of our Postmaster General's attempt last year to interfere with, and defeat, the express of the Journal of Commerce:

"You have probably heard of the erection of commercial telegraphs on the route from Paris to Rouen; and of the opposition offered to the undertaking by the French Government. The persons at the head of it, however, being men of wealth, took the opinion of about twenty of the most eminent men at the French bar, who declared, that the Government could not, without a gross violation of the law, prevent the establishment of commercial telegraphs. Consequently there is no chance of their being put down, except by the Chamber of Deputies: but this is not expected, although Ministers say that they will make every effort to obtain their suppression. In the course of a few months, there is to be a line of telegraphs on the route from Paris to Calais, by which means you will get all important news very rapidly in London; as the estimated rate of expedition is two hundred and fifty leagues per hour in the day, and about one hundred in the night."

The Fall of the Brighton Antheum.—[Further Particulars.]—The Antheum was the largest dome in the world, exceeding in diameter that of St. Peter's at Rome by 36 feet, the width of the dome at bottom being 164 feet, and the height from the ground to the top of the ring exactly 64 feet. With the cupola it would have been 80 feet or more in height outside; and the height inside, to admit the lofty palms, would have been considerably increased by gradually sinking the ground. It must be remembered that the dome was not, like St. Peter's, placed on a height; it rose at once out of the ground. At six o'clock, the workmen left as usual, excepting a man named Wyatt and the head gardener, whose duty it was to see the house locked up and everything secure. A little before seven, the gardener, who was in the centre, was alarmed by a loud cracking noise:—Wyatt axclaimed "save yourself it is not safe," and he had barely escaped at the north entrance and climbed over the pailing, when the whole top part of the dome fell in with an awful rapidity. He describes the ribs as having fallen down, one after another, like a pack of cards, accompanied by a sound resembling the continued firing of cannon. The millions of sparks produced by so many pieces of iron striking against each other, made it appear as if the dome had fallen in a bed of flames; and some brickmakers in the next field actually gave an alarm of fire. The shock was so great in the neighborhood that the "lights" of the plant and melon pits simultaneously slid from their frames. Immediate information of the disastrous calamity was forwarded to Mr. Philips, who arrived at the spot in a state of the greatest agitation; but finding that no lives had been sacrificed, he gave the necessary direction for keeping out the curious who crowded to the spot; and very fortunate it was that he did so, as during the night, many of the principals, which were left standing, came down with a tremendous crash. The loss is tremendous; the labor for putting up the iron work only, not reckoning the expense of carriage and casting, &c.—the simple labor on the dome itself, cost upwards of two thousand pounds. We learn that it is likely the Antheum will be re-erected. Messrs. Goldsmid, Hollis, and English, were all here on Monday, and arrangements will be instantly made for re-building it. Crowds of persons have been to see the ruins.

Pope Gregory XVI.—Bishop England of South Carolina, in a letter published in the newspapers, thus describes the occupation and habits of the present Pope, whom the writer of "first impressions of Europe," in the Mirror, calls "an indolent and good old man."

His ordinary hour of rising is about 4 o'clock in the morning, at all seasons of the year. He devotes to private religious exercises, such as prayer, meditation, the celebration of the Mass, and spiritual reading, nearly three hours At 7 o'clock, he commences his audiences of the Secretary of States, and other offices employed in the temporal governments of his states. In this laborious occupation several hours are daily consumed. He takes no breakfast; but occasionally a cup of coffee—of which beverage he is extremely fond—is brought to him as a refreshment.

When this duty is discharged by giving decisions and directions, either some of his own subjects are received upon business, or foreigners are presented—and thus some time is occupied. His holiness has no fixed time for dinner, which is his only meal; but when the press of business subsides, he takes alone an exceedingly plain and moderate refection. The estimate of expenses for this dinner, including wines, fruit, &c. would be too high at five dollars the week. After a short rest, and sometime devoted to prayer, the holy father walks for an hour or two in the gardens; on which occasions some of the principal foreigners of distinction, who have been previously presented, are upon special leave permitted to introduce him to the ladies of their family. At about 5 o'clock in the afternoon, he proceeds to his cabinet to receive the prefects or secretaries of the several congregations for ecclesiastical affairs, foreign prelates, and others with whom he has business relating to the church. He is generally occupied with them till after 8 o'clock; not unfrequently till 9. His evening devotions must then be attended to, previously to his retiring for the night.

The above order is indeed often interfered with, by the necessity of his presiding at congregations of cardinals and prelates upon special and important extraordinary cases of ecclesiastical business, as also of his presiding at consistories, where the whole body of cardinals assembles to deliberate on some weighty affair, relating sometimes to the government of his States, sometimes to the general concerns of the Church: he is moreover required on solemn occasions to attend at the grand ceremonies of the church, on the principal festivals; and sometimes too, though seldom indeed, does he break from his laborious routine, in order to ride or walk a few miles into the country, to inhale a more pure air, and to unbend a mind drawn to its utmost pitch, by such close application to the most important concerns of millions for this world, and of myriads for the next. This is, indeed, but a slight indulgence for one who in his sixty-ninth year is pressed upon so heavily by the concerns of time, and the concerns of eternity! Occasionally, when the weather will not permit his excursion or his walk in the garden, the father of the faithful might be found viewing, in his moments of relaxation, those glorious productions of nature and art with which the magnificent galleries of the Vatican are filled. No one surely would reproach him for such occupation of a moment thus given to restore the elasticity of his mind; unless, perhaps, we might be able to resuscitate the man who was scandalized at discovering St. John, the Evangelist, occupied with a hawk, as the companion and object of his mental relaxation.

[*From the " Village Belles," a novel, in 2 vols.*]

Subjoined is a short sketch of a humorist, and an original.

The defunct Sir John Worrel had been something of a humourist. " Knowledge is power," said he, " the power of making one's self disagreeable."—That he might not make himself disagreeable, he never opened a book after he became his own master; but devoted himself to the gratification of an extraordinary passion for bell ringing. At first he used to practice in the parish church, but his constant peals disturbing the studies or the slumbers of Mr. Wellford's predecessor, a quarrel ensued between baronet and vicar, and Sir John set up an opposition belfry in his own ground. Here he and his men servants amused themselves many a long hour; ding donging the good people of Summerfield out of their senses, and wearing Mr. Greenway to a thread with low spirits, except when a north wind carried the noise to Haxley, and nearly put a stop to the business of the place. Sometimes they pealed, at other times they tolled; at length, Death, out of patience at so much tolling without any burials, took off Sir John. His relict sold the bells, and the campanile fell into decay.

One more sketch, in which a glimpse is given of the charming Rosina.

Rosina, for reasons well known to herself, had decided on walking; and she said so much more than the occasion required, about being an excellent pedestrian, never feeling tired, scorning donkey-chaises, &c., that Hannah, without more ado, took the vacant seat, and the party set off.

Mr. Russell offered his arm to Rosina, Huntley walked next to her on the opposite side, and for some little time, the whole party continued together, exchanging desultory remarks on the scenery and the weather; but presently coming to a steep cart-track, Huntley ran forward to support the chaise, which seemed to him in imminent danger of losing its balance, and he continued to keep his hand on the side rail while answering some inquiry of Mrs. Welford's. Arrived at the end of the lane, a fine turfy down opened before them; the donkey began to trot, and Huntley to run, still keeping his hold on the chaise elbow, and continuing his laughing dialogue with the ladies, which, from the rattling of the wheels was necessarily carried on in a raised tone of voice. The clear fresh air of the heath heightened the complexions of Hannah and Huntley, each of whom thought they had never seen the other look so handsome; and the race continued till a slope of the downs carried them out of sight of Rosina and Mr. Russell. Hannah looked back after them once or twice, and asked her mother if they had not better wait.

" That is easier said than done, Hannah," replied Mrs. Welford, smiling, as she vainly pulled the rein, " Our magnanimous donkey seems to have snuffed inspiration from the breezy air."

" Is this your best driving, madam?" asked Huntley, " I thought you had been a better whip. Ah, give him the rein; you are hurting your gloves more than his mouth. This unwonted speed will soon abate, depend upon it; and we may as well await our distanced companions at the foot of the next hill as any where else."

Acting on this resolution, they half traversed Hexley common.

Rosina, in the mean while, had been rather annoyed at being left behind with Mr. Russell. " He had joined them," she said to herself, " without being wanted by any body, and now had completely broken up the party."

" Had not we better walk faster?' said she gently dragging him forward as she spoke: " they will be out of sight presently."

But no: Mr. Russell hung heavy on hand.

" We cannot keep up with them," said he composedly, " and I dare say they will wait for us at the bottom of the slope."

" Oh don't trust to that," cried Rosina eagerly, " for I know the Holland's donkey of old, and when it once takes to trotting on Hexley-heath, it never stops till it reaches the foot of the White-thorn hill."

" In that case," replied Mr. Russell, " there is still less chance of our keeping up with them; so you see, Rosina, it was a lucky thing I fell in with you, or you would have been left to yourself."

" No, that I should not, I am sure," cried Rosina, indignantly tossing her chin. Don't you think," resumed she, " that we had better try to gain the slope at any rate, before they are out of sight, that we may see which track they take."

" Oh," continued Mr, Russell, " I know my way to the brow of the hill perfectly well."

" But I am not so sure that mamma does," interrupted Rosina.

" If she loses her way," replied he drily, " we are not answerable for it; since she has run away from us, not we from her. However, we shall all meet at our journey's end, I make no doubt."

Rosina could not help letting her lips betray that note of impatience which can only be imperfectly implied on paper by the syllable " tut!" The vexation was increased by her imperturbable companion's coming to a full stop, apparently for no other purpose than to scent the reviving air.

" Delightful!" exclaimed he at length, with a tone and countenance of keen enjoyment. " Here, indeed, as your favorite Cowper expresses it, the sense is regaled

> ' With luxury of unexpected sweets.' "

" *My* favorite Cowper!" repeated Rosina with contempt, " Hannah's favorite Cowper, if you please. I have no taste for such dull, prosy writers, who instead of giving airy nothings a local habitation and a name, describe just what is before their eyes and no more, with the accuracy of a camera obscura. The 'Lay of the Last Minstrel' is worth all that a thousand Cowpers could write. 'The Task' too! Such a name! Enough to sicken one at the very outset. There is a great deal in a name, though Juliet chose not to think so; and Cowper fixed on one equally hateful to teacher and scholar."

" Very good, Rosina!" said Mr. Russell laughing, " there is much originality in what you say, and I always derive amusement from your ideas, though they are not—or more properly, *because* they are not in exact accordance with my own. As to your opinion on the subject of names, I agree with you that Miss Juliet Capulet was very unadvised when she exclaimed, ' What's in a name?' and that she would have been compelled to answer 'a great deal,' if it could have been proved that the so-called Signor Romeo Montague had no right to any other appellation than plain Stokes or Stubbs. Her love would speedily have been nipped in the bud, we may be certain. I myself am not a little proud of a name which revives associations with the noble, the brave, and the patriotic; and Mr. Huntley would fall five per cent. in your estimation, I dare say, if he were to turn out a mere Smith or Williams."

" Some people," said Rosina, " have more to boast of than their names."

" Why, that is true, too," rejoined Mr. Russell, " and I think you, Rosina, are among the number; for Wellford is not a very striking name. Rosina is pretty and Italian-like enough, but Wellford has not much to recommend it. Take my advice, therefore, and change it as soon as possible."

" Really, Mr. Russell——" exclaimed Rosina, very pettishly.

" Really what, Miss Rosina?"

Mr. Russell laughed with such thorough good humor at this speech, that Rosina, fearful of having rather exceeded the bounds of propriety, began to think she might as well treat him with a little more consideration. She was also aware that she was exposing herself to ridicule by displaying so much vexation at having been forsaken by Huntley. For the next ten minutes, therefore, all was smooth and agreeable.

At the expiration of that time, our walkers gained the top of the slope, and could perceive no traces of their companions on the wide-extended heath before them. Rosina's irritation now returned, and she declared that it was ill-natured of her mother and Hannah to leave her behind, as she was growing very tired.

" Indeed!" cried Mr. Russell, then you sadly over-rated your powers, when you said you were sure you could walk to Hexley-hill and back without fatigue! Bless me, what can be done in this emergency? How came you so to deceive yourself? But perhaps," added he, glancing slyly at her delicate *chaussure* and the pretty French glove that rested on his arm—" perhaps your fatigue in some measure depends on who is your companion."

Rosina was too much provoked to answer.

" Well then." pursued the abominable Russell, " as silence gives consent, I am to infer that Huntley is the happy man. Poor me! What shall I do to render myself less obnoxious? Shall we turn back? I am entirely at your disposal.—No.—Well then, let us make the best of our way forward, and I will make myself as agreeable as I can. Shall I carry your parasol for you?—you won't let me—come, then, that little bag; I long to be of service. Are there any sandwiches in it?"

" As if I should carry sandwiches!" said Rosina half laughing.

It might be worse filled, though—this air is what Greenway calls ' very appetizing.' Are you quite sure you are not deceiving me—No—here are a cambric handkerchief, a smelling bottle, and some keys—oh, I understand pockets are gone out of fashion."

" You are mistaken, there are no keys."

" Are there not?—I thought there were. By the by, Rosina, I have some news for you."

" Have you?"

" Yes—concerning an old flirt and favorite of yours. Can you guess whom I mean?"

" No indeed."

" Try."

" An old favorite."

" And flirt too—very, very old."

" I am sure I cannot imagine," said Rosina, carelessly, " unless it is Lewis Pennington."

" *Unless!*" that is a lucky guess of yours, Rosina. Yes, Lewis Pennington it is. I had a letter from him this morning. He has left Oxford, and writes to me that—what do you think?"

" How can I tell what to think—Lewis and I used to be very good friends when we were children, but really that is so long ago, that I have nearly forgotten him. How can I guess what he has written about?"

" ' What's Hecuba to him, or he to Hecuba;" ' repeated Mr. Russell; " but, indeed, Rosina, you must show a little more curiosity respecting my intelligence before I communicate it. News, you know, is a London staple: and as silks, ribbons, bobbins, everything from the great metropolis, has a neat little profit tacked on to it by the country retailer, so news is by far too scarce an article in our hamlet to be disposed of for nothing. Come, guess, guess!—I had nearly said ' an' thou lovest me.' "

Certainly Mr. Russell seems a little touched this morning, thought Rosina: what can have made him so exceedingly absurd?

" I suppose," said she with as unconcerned a tone and look as possible, " Lewis is going to be married. If that is not it, I have nothing else to guess.—Whatever it is I care very little about it."

" Can that be true, Rosina?"

" Quite true, I assure you, Mr. Russell."

" Oh, very well!" said he with a mischievous smile, " I will not waste my news on a person who does not care for it; and if, as I shrewdly suspect, this indifference is only assumed, you will deservedly punish yourself. Take care, however, that the news, when it *does* reach you, as it certainly will, does not come on you like a thunderbolt."

" A thunderbolt! how absurd?" said Rosina.

" We shall see!" said Mr. Russell, smiling.

He then continued to walk on, silently knocking about the flints and pebbles which lay in the path with his cane; till Rosina, who was secretly curious to know his mighty intelligence, asked him if he expected, like the Duke in " As you like it," to find a sermon in the stones.

" Why, possibly this flint," said Mr. Russell, picking one up from beneath his feet, " might, if it had a tongue, chatter quite as much to the purpose as many bipeds. For what reason,' we may imagine it to exclaim, 'am I left here in inglorious solitude, wedged in coarse marle, or kicked out of the way by every clouted peasant that crosses this path to pursue his daily labor, when many other flints, by no means so comely as myself, are selected by the partial hand of man to raise the cottage wall, or emit the generous spark?' Ah, foolish flint! you know not of what you complain. Borne hence in the object of your ambition, viz., the flint gatherer's basket, you would find yourself exposed to many rude buffets in that world, which, at distance seen, so allures your inexperienced imagination. Hard blows from the workmen's trowel, or stunning thumps against the sturdy steel, administered by the greasy hands of a cookmaid; and even in repose—what repose! the filthy darkness of a kitchen drawer! Be grateful to me, mistress flint, for restoring you to your inglorious but peaceful abode in the footpath, where the soft breeze blows over you, the blue sky shines above you, and the gorse and heather bloom at your side; and know that your fate is a type of many a charming fair who sighs for the gaiety of high life, but is luckily condemned to remain in that seclusion where, would she but discover it, the truest happiness is to be found! Well, Rosina, have I discoursed most eloquent nonsense?"

" Certainly, Mr. Russell," said she, smiling, as she felt her ill-humor rapidly thawing away, " you are a very odd sort of person, and though you like teazing a little sometimes, it is impossible to be out of temper with you long together."

" Out of temper!" exclaimed he; " ' do you confess so much? Give me thy hand!' Come, Rosina, answer as Brutus did,

> ' And my heart with it!' "

I will put no unfair construction on the words, I promise you. You won't? Well then I must say that you are a very odd sort of person too, and that it is impossible to be out of temper with *you* long together. We have make up our reconciliation just in time; for sure enough there is the donkey chaise where you said it would be, at the foot of the Whitethorn hill. So now it will be but fair that Hannah and Huntley shall be left to toil in the rear as we have done, while Mrs. Wellford, you, and I ascend the hill with the speed of the wind."

Not even the conclusion of this speech could now put Rosina out of humor. She walked forward briskly, and they soon came up with the donkey-chaise party, who looked the picture of content. Huntley ran towards Rosina as she approached, and offered her his arm. Thus supported on either side, she told Hannah she could very well walk up the hill, though her late complaints to Mr. Russell shamed her from again mantaining that she felt no fatigue. They all proceeded to their place of destination; Rosina conversing with Huntley in high spirits, and in the overflowing of her satisfaction, bestowing many smiles and lively sallies on Mr. Russell.

"Aha!" thought he to himself, "my young lady is fairly caught for the present; but it will not last long, and I know why."

Without stopping to search into the meaning of this mysterious "I know why," we must proceed to the summit of the hill, where Mr. Huntley, as all had expected, was much struck with the view which opened before him. It was too extensive, however, he said, to be a fit subject for a sketch: it was vast, but not picturesque. Much was discussed learnedly and unlearnedly, on *coupe d'œil*, grand masses, broken foregrounds, light and shade. At length Mrs. Wellford proposed returning.

Mr. Russell does not seem quite ready to go," observed Rosina. "See how pensively he stands with folded arms, quite absorbed in meditation! What are you considering Mr. Russell?"

"Nothing very particular," replied he, turning round with a smile, "I was merely letting myself be breathed on by this delicious wind; or, if I was thinking at all, I believe it was that I felt very hungry."

"What a poetical confession!" exclained Rosina; I expected to find you had been engaged in some very sublime speculation."

"Give me leave to ask, Miss Rosina Wellford, have *you dined?*"

"Yes, I have."

"Well, I have not: therefore, the next time we compare the relative sublimity of our ideas, pray let us start fair on this point. At present, you have the advantage of me."

The laugh was now against Rosina. Hannah offered to walk, and her younger sister seated herself in the chaise without complaint. The walkers and riders kept more together on their return than they had done before; and on reaching the White Cottage they separated with mutual expressions of satisfaction.

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☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1832.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

MARRIAGES.

In this city on Thursday morning, 24th inst. by the Rev. Joel Parker, ISAAC LITTLEFIELD, Esq. of New Orleans, to JOSEPHINE, eldest daugher of Samuel L. Waldo, Esq.

On Monday evening last, by the Right Rev. Bishop Onderdonk JOHN ALPHONSE TARDY, to CECELIA, youngest daughter of Alexis Eustaphieve, Russian Consul General, both of this city

On Tuesday evening, by the Rev. Dr. Varela, MR. THOMAS BEVINS. Jr., to Miss CHRISTIANA HEALY, all of this city.

On Tuesday morning, in the Middle Dutch Church, by the Rev. Dr. Brownlee, Mr. E. J. SWORDS, of this city, to Miss JEMIMA, daughter of the late James Striker, Esq. of Bloomingdale.

On Thursday evening last, at the quarters of Col. Eustis, Fort Monroe, Hon. JOEL R. POINSETT, to Mrs. MARY PRINGLE, both of Charleston, S. C.

In Rochester, on the 14th instant, by the Rev. Mr. Kellogg, Mr. LUTHER TUCKER, editor of the Rochester (N. Y.) Daily Advertiser, to Miss MARY, daughter of E. Sparhawk, Esq.

In St. Matthew's Church, in Unadilla, on the 22d inst., by the Rev. Norman H. Adams, Mr. GEORGE H. NOBLE, merchant of that place, to Miss ELIZABETH B. PAGE, daughter of the Hon Sherman Page, all of the same place.

On the 22d inst., in St. Peter's Church. Auburn, by the Rev. Mr. Lucas, ISAAC T. MINARD, of Baldwinsville, to ELIZABETH S., eldest daughter of James D. Wallace, of the former place.

At the residence of the Hon. E. Savage, in Salem, Washington Co., on the 23d ult. the Hon. MICAH BROOKS, of Brooksgrove, Livingston Co., to Miss ELIZABETH CHATTIN, of the former place.

In London, on Wednesday, the 4th of September, by the Right Rev. the Bishop of London, JOSEPH FENWICK, Esq. to ELIZABETH HUGHES, late of the Park Theatre, New York.

DEATHS.

On 24th Oct., JOHN BROOME BOGGS, son of JAMES BOGGS, aged 23 years.

The high intellectual endowments of this young man; the spotless purity of his life, and the eager soarings of a spirit which the darkness of the shadows of death, that has long menaced its earthly tabernacle, had no power to check; his patience and resignation under long suffering; and his tranquil departure from a world, which his abiding Christian hope and trust had long taught him to look upon as at best a scene of trial to fit him for another; combined to render the early death we here announce, one of deep yet not unmitigated affliction to the parents and relatives, who have long watched his waning health. Their consolation must be found where he whom they mourn found his strength, in the hour of dissolution.

On Friday afternoon, Oct. 25th, at his residence in New York, Lieutenant JOHN A. WISH, of the United States Navy.

This morning, CATHARINE AMANDA, infant daughter of John G. and Catharine Clayton, aged 21 months.

On Saturday last, after a lingering illness, GEORGE W. BUNE, aged 34 years, son of Mr. Nathaniel Bune.

On Seventh day evening, 26th inst., JOHN MERRITT, in the 76th year of his age.

On Monday morning, Mr. G. Z. HIGBIE, in his 38th year.

On Sunday morning, after a lingering illness, Miss MARIA BOARD, in the 37th year of her age.

On the 26th inst., after a short illness, Capt. JOSEPH CUTTER, a Revolutionary Soldier, in his 80th year.

On 26th inst., Mr. ABRAHAM STORMS, formerly of Dutchess county.

At Newport, ENOCH PECKHAM, aged 100 years and 5 months, a revolutionary pensioner.

At Madisonville, Lou., of yellow fever, on the 29th August last, Mr. SYLVANUS PARSONS, of this city.

In Boston, on Friday morning, Mr. GEORGE HARRISON OTIS, son of the Hon. Harrison G. Otis, aged 23.

At Peekskill, on the 21st inst. MOSES FIELD, late of this city aged 53 years The poor of this city could not have sustained, greater loss in an individual. No man had more enlarged or persevering benevolence in feeding the hungry and clothing the naked, and providing for the sick. His greatest happiness appeared to be to mitigate the sufferings and relieve the wants of the virtuous poor.

At Cowes, Eng., on the 6th ult., GRACE SCHUYLER HUNTER, eldest daughter of Robert R. Hunter, Esq. formerly of this city.

On the 12th Sept. at Carthagena, of the yellow fever, Mr. ABRAHAM KASHOW, late of this city, aged 24.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

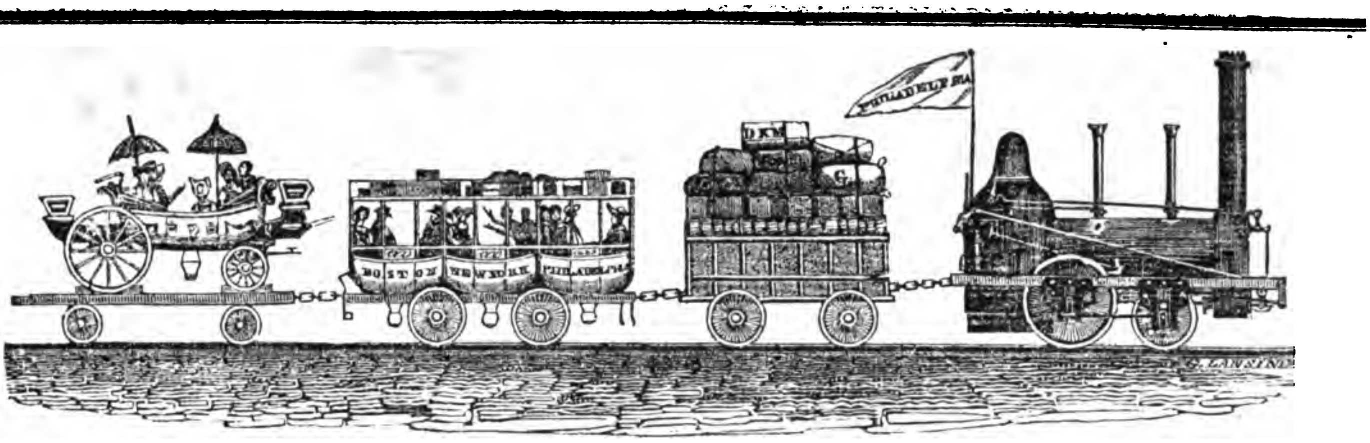
References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 31 R J M M & F

NEW-YORK PRICES CURRENT:

Corrected from the "New-York Shipping and Commercial List"—Wednesday, October 30, 1833.

ASHES—			
Pot, 1st sort 1833..100 lbs	4 45	a	—
Pearl..........do	5 10	a	5 12½
BARILLA—			
Teneriffe..........ton	—	a	50 00
BEESWAX—			
White..........lb	21	a	24
Yellow..........do	19	a	21
BOTTLES—			
Bristol Porter...gross	7 75	a	8 25
Wines..........do	6 00	a	8 00
BREAD—			
Navy..........lb	—	a	3¼
Pilot..........do	—	a	4½
Crackers..........do	5½	a	6
BRISTLES—			
Russia, first sort ....lb	60	a	—
Do. common...do	20	a	36
American..........do	15	a	44
CANDLES—			
Mould, tallow ....lb	12½	a	14
Dipped..........do	11	a	12
Sperm..........do	33	a	35
CLOVERSEED ..lb	—	a	—
COAL—			
Liverpool ....chaldron	11 00	a	11 50
Scotch..........do	—	a	7 00
Sidney & Bridgeport.do	8 00	a	8 50
Albion..........do	7 75	a	8 00
Virginia..........do	8 00	a	9 00
Anthracite..........ton	5 50	a	6 25
COFFEE—			
Cuba..........lb	11	a	12½
Brazil..........do	12	a	13½
Porto Rico..........do	12½	a	13½
Laguira..........do	12½	a	13½
St. Domingo..........do	—	a	12½
Java..........do	13	a	14
Jamaica..........do	—	a	—
COPPER—			
Sheathing..........lb	22½	a	23
Pig..........do	16½	a	17
Old..........do	17	a	17½
Bolt..........do	24	a	—
CORDAGE—			
Foreign..........lb	9½	a	11
American..........cwt	9½	a	10
CORKS—			
Velvet..........gross	38	a	45
Common..........do	20	a	33
Phial..........do	5	a	12
COTTON—			
New Orleans..........lb	15	a	18
Upland..........do	13	a	16½
Alabama..........do	13½	a	17
Tennessee..........do	12½	a	14½
COTTON BAGGING—			
Hemp..........yd	22	a	25
Flax..........do	18	a	20
Do. American ......do	22	a	25
DUCK			
Russia, U. X. ... Do. Bruisguins } bolt	16 75	a	17 50
Do. Zotoff & Konop'ff	15 50	a	15 75
Do. 3d quality ..do	15 00	a	—
Do. inferior.....do	11 00	a	14 00
German, Half......do	11 00	a	—
Holland, A. A. ......do	24 00	a	—
Ravens..........do	6 00	a	7 50
Amer. Joy's, all flax, No. 1 a 3........do	11 00	a	14 50
Do. Phenix Mills, Paterson, flax, No. 1 a 3.	16 00	a	19 00
Do. cotton, Paterson, No. 1 a 10......yd	26	a	39
DYE WOODS—			
Brazilletto..........ton	28 00	a	30 00
Camwood..........do	—	a	80 00
Fustic, Cuba........do	—	a	30 00
Do. Tampico....do	—	a	27 00
Do. Maine.......do	20 00	a	22 00
Logwood, Camp'hy.do	26 00	a	27 00
Do. St. Dom..do	21 00	a	22 00
Do. Jamaica..do	—	a	18 00
Nicaragua, Bonaire.do	—	a	45 00
Do. Coro....do	—	a	50 00
Do. Hache ..do	65 00	a	70 00
FEATHERS—			
Live, Foreign ......lb	14	a	30
Do. American .....do	38	a	42
FISH—			
Dry Cod..........cwt	2 50	a	2 62½
Scale..........do	—	a	1 75
Pickled Cod.........brl	—	a	—
Do. Salmon.....do	14 50	a	15 00
Smoked do. .....lb	—	a	—
Mackerel No. 1 ....brl	6 00	a	6 25
Do. No. 2.....do	—	a	5 00
Do. No. 3.....do	—	a	3 37½
Shad, Conn. Mess...do	9 00	a	9 50
Do. Bucksport, do. .do	—	a	—
Herrings..........do	2 25	a	2 50
Do. Smoked...box	36	a	90
FLAX—			
Russia..........lb	11½	a	12
American..........do	8½	a	10
FLAXSEED—			
Clean..........cask	—	a	—
Rough..........do	12 25	a	12 50
FLOUR AND MEAL—			
NewYork suprfine..brl	—	a	5 62½
Troy..........do	5 62½	a	5 69
Western Canal .....do	5 62½	a	5 81
Philadelphia ....do	—	a	6 00
Baltimore Howard st.do	6 37½	a	6 50
Richmond City Mills..do	—	a	7 00
Do. Country...do	6 12½	a	6 25
Georgetown..........do	6 12½	a	6 37½
Alexandria..........do	6 00	a	6 25
Fredericksburg.....do	—	a	—
Petersburg..........do	6 12½	a	6 25
Scratched and fine..do	—	a	5 37½
Fine middlings......do	—	a	5 00
Rye Flour..........brl	—	a	3 87½
Indian Meal........do	3 75	a	3 87½
Do. ...... hhd	16 50	a	16 75
GRAIN—			
Wheat, North riv..bshl	—	a	—
Do. Genesee....do	1 17	a	1 18
Do. Virginia....do	1 18	a	1 22
Do. N.Carolina..do	1 03	a	1 06
Rye, Northern .....do	—	a	80
Corn, Yellow, North.do	76	a	78
Do. White, L.I.&N.J..	75	a	78
Do. Southern......do	66	a	71
Barley, North river..do	72	a	73
Oats, South & North.do	28	a	45
Peas, white dry..7 bshls	7 00	a	8 00
Do. black eyed....do	—	a	—
Beans..........do	8 00	a	11 00
HEMP—			
Russia..........ton	170 00	a	175 00
Manilla..........do	160 00	a	170 00
Sisal..........do	—	a	—
American dew-rot...do	100 00	a	120 00
Yarns, Kentucky ...lb	—	a	—
HIDES—			
LaPlata & R.Grande.lb	14	a	15
Brazil..........do	10	a	12
Do. wet salted ...do	7	a	7½
Oronoco..........do	12½	a	13
W. India & Southern.do	10	a	11½
S. A. Horse......piece	1 15	a	1 35
HONEY—			
Havana........gallon	45	a	47
HOPS—			
First sort, 1833......lb	20	a	22
Second sort, do.....do	—	a	—
HORNS—			
Ox..........100	5 00	a	20 00
INDIGO—			
Bengal..........lb	1 25	a	1 75
Manilla..........do	90	a	1 25
Caraccas..........do	1 20	a	1 37½
Guatemala..........do	90	a	1 31
IRON—			
Pig, Engl.& Scotch..ton	37 50	a	45 00
Do. American ......do	30 00	a	40 00
Bar, do. ....do	72 50	a	75 00
Do. Russia, P. S. I..do	—	a	92 50
Do. new Sable.do	—	a	85 00
Do. Swedes........do	80 00	a	—
Do English ass'td..do	72 50	a	75 00
Sheet, English.....cwt	6 25	a	6 75
Peru I.Co. flat & sq..ton	—	a	—
Do. round....do	—	a	—
Hoop, American...cwt	6 00	a	6 25
Do. English......do	6 25	a	6 50
JUNIPER BERRIES	2	a	3
LEAD			
Pig..........lb	—	a	6
Bar..........do	—	a	6
Sheet..........do	6½	a	—
Old..........do	5½	a	5½
LEATHER—			
Sole, Oak tanned....lb	18	a	27
Do. Hemlock......do	16½	a	18
Do. damaged......do	12½	a	14½
Upper, dressed....side	75	a	2 75
Do. undressed...do	1 00	a	2 25
LUMBER—			
Boards, N. R.....M ft	16 00	a	17 00
Do. East'n Pine.do	17 00	a	18 00
Do. Albany do .pce	17	a	18
Plank, Georgia do. M ft	25 00	a	35 00
Staves, W. O. pipe..do	62 00	a	65 00
Do. do hhd....do	40 00	a	44 00
Do. do brl.....do	36 00	a	—
Do. R. O. hhd...do	—	a	27 00
Heading W. O. .....do	18 00	a	50 00
Hoops..........do	25 00	a	30 00
Scantling, Pine .....do	15 00	a	16 00
Do. Oak .....do	20 00	a	25 00
Timber, Oak.....sq. ft	20	a	25
Do. Geo. Yell. Pine.do	25	a	30
Shingles, Cypress. M ft	4 —	a	18 —
Do. Pine..bundle	—	a	—
MOLASSES—			
Martinique & Guad.gall	29	a	32
English Islands.....do	28	a	33
Havana & Matanzas.do	27	a	31
Trinidad de Cuba...do	32	a	33
New Orleans.......do	30	a	33
MUSTARD—			
English.......... lb	25	a	31
Do. in bottles..doz	1 25	a	1 37½
American.......... lb	20	a	30
Do. in bottles.doz	75	a	1 25
NAILS—			
Cut, 4d to 40d.......lb	—	a	6
Cut, 3d..........do	7	a	8
Cut, 2d..........do	—	a	8½
Wrought..........do	10	a	16½
NAVAL STORES—			
Tar..........brl	1 87½	a	2 00
Pitch..........do	1 50	a	1 62½
Rosin..........do	1 12½	a	1 75
Turpentine Wilm. soft.	—	a	3 12½
Do. North Co. do.do	—	a	2 75
Spirits Turpentine. gall	40	a	42
OILS—			
Florence 30 flasks..box	4 50	a	5 00
French 12 bottles..bskt	3 25	a	4 00
Olive..........gallon	96	a	1 00
Linseed, American..do	94	a	96
Do. Eng.& Dutch.do	—	a	98
Whale..........do	25	a	26
Do. refined.......do	—	a	—
Sperm, Summer....do	93	a	95
Do. Winter.....do	1 05	a	1 10
Liver, Straits......brl	—	a	14 00
Do. Shore & Bank.do	12 00	a	13 00
PLASTER PARIS .	—	a	3 25
PORTER AND CIDER—			
Porter, London....doz	2 50	a	2 75
Do. American...do	1 75	a	2 00
Cider, draught.....brl	1 75	a	10 00
Do. bottled, box.doz	2 00	a	2 50
PROVISIONS—			
Beef, Mess..........brl	8 50	a	9 00
Do. Prime..........do	5 50	a	5 75
Do. Cargo..........do	—	a	—
Butter, N. Y. Dairy..lb	14	a	17
Do. Shipping....do	8	a	11
Do. Philadelphia.do	8	a	10
Hog's Lard..........lb	9	a	11
Pork, Mess..........do	16 50	a	17 00
Do. Prime..........do	12 00	a	12 25
Do. Cargo..........do	—	a	—
Cheese, American...lb	6½	a	7½
Hams, Virginia.....do	—	a	10
Do. Northern....do	9	a	10
RAGS—			
Foreign..........do	3	a	6
Country..........do	3	a	5
RICE..........100 lb	3 00	a	3 62½
SALT—			
Turk's Island.....bshl	45	a	—
Isle of May..........do	—	a	—
St. Ubes..........do	30	a	40
Cadiz..........do	36	a	38
Lisbon..........do	—	a	30
Liverpool ground ...do	—	a	33
Do. blown ....do	—	a	—
Do. sack do. ..sack	1 90	a	2 00
SALTPETRE—			
Refined..........lb	8	a	9½
Crude E. I..........do	6½	a	6¾
SOAP—			
New-York, Brown ..lb	5½	a	6½
Castile..........do	11	a	12
SPELTER.......lb	4½	a	5½
SPIRITS—			
Brandy, Ot. D.&Co.gal	1 56	a	1 60
Do. Rochelle...do	1 30	a	1 37½
Do. Bordeaux ..do	1 25	a	1 30
Rum, Jam. 4th proof.do	95	a	1 12½
Do. St.Croix, 3d do.do	95	a	1 00
Do. Wind. Isl. 3d do.do	80	a	85
Do. N Orl'ns, 1st do.do	45	a	50
Do. N. Eng. 1st do..do	37	a	38
Gin: Holl'd, Meder Swan	—	a	1 12½
Do. Hour Glass.do	1 08	a	1 10
Do. Pine Apple.do	1 10	a	1 12½
Do. Imperial ...do	—	a	1 08
Do. Country........do	37	a	42
Whiskey, Rye......do	30	a	31
Cider Brandy.......do	28	a	30
STEEL—			
German..........lb	10½	a	11½
English..........do	11	a	14
Trieste, in boxes....do	7	a	7½
American..........do	5½	a	6
SUGARS—			
British Island.......lb	7½	a	9½
St. Croix..........do	8½	a	10
New Orleans.......do	7½	a	9½
Havana, White.....do	9	a	10½
Do. Brown.....do	7½	a	9
Do. Muscovado.do	7½	a	8
Porto Rico..........do	8	a	9
Brazil, White.......do	8½	a	9
Do. Brown.......do	7½	a	8
Manilla, Brown.....do	—	a	—
Lump..........do	13	a	15
Loaf..........do	16	a	18
SUMAC—			
Sicily..........ton	70 00	a	—
Trieste..........do	—	a	40 00
American..........do	—	a	35 00
TALLOW—			
Foreign..........do	9	a	9½
American..........do	9	a	9½
TIMOTH. SEED.tce	14 00	a	16 00
TIN—			
Block, S. American..lb	—	a	13
Do. East India...do	—	a	15½
Plates, ½ X........box	—	a	9 00
TOBACCO—			
Richmond & Petersb.do	4	a	8
North Carolina .....do	—	a	—
Kentucky..........do	4½	a	8
Cuba..........do	8	a	16
St Domingo........do	9	a	15
Manufactured, No. 1.do	11	a	13
Do. No. 2.do	8	a	9
Do. No. 3.do	7	a	8
Ladies' Twist........do	15	a	18
Cavendish..........do	12	a	27
TORTOISE SHELL	9 50	a	10 50
TWINE—			
Seine [24 lb]........lb	—	a	30
Sewing..........do	30	a	34
India..........do	14	a	18
WHALEBONE—			
Slab..........lb	—	a	20
WINES—			
Madeira.......... gall	1 12½	a	2 25
Sherry..........do	80	a	2 00
Canary, Cogswell's..do	90	a	1 37½
Teneriffe L. P........do	75	a	1 12½
Do. Cargo.....do	60	a	70
Malaga, dry........do	40	a	48
Do. sweet......do	44	a	48
Claret..........cask	12 00	a	20 00
Do. in bottles ....doz	2 00	a	6 00
Port..........gall	70	a	1 87½
Lisbon..........do	80	a	1 25
Marseilles Madeira..do	42	a	50
Catalonia..........do	30	a	40
WOOL—			
Merino, Am. fleece...lb	44	a	57
Do. pulled..do	46	a	50
Common..........do	30	a	35
Pulled, spinning ....do	40	a	45
Lambs, 1st quality ..do	41	a	44
Do. 2d quality...do	31	a	34
Do. 3d quality...do	21	a	23



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D. K. MINOR, Editor.] SATURDAY, NOVEMBER 9, 1833. [VOLUME II.—No. 45.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, NOVEMBER 9, 1833.

Mechanics' Magazine.—The October number of this work is published. It contains a great variety of articles on various subjects; amongst others, a full account of the articles exhibited at the Fair at Masonic Hall, together with the able address of Mr. Kennedy, delivered before the American Institute at Chatham street Chapel.

The "Observations on Railroads, and Hints to Railroad Companies," by a "Civil Engineer," which we copy from the London Morning Chronicle, will be found well worthy of consideration, as well in this country as in Great Britain, by all who are interested in the success of the system to which it relates. The proposition there laid down, that the *interest* of the companies will warrant the offer of large premiums for *improvements* in the locomotive engine, scarcely needs an argument with those who are aware of the expense of those engines. It is within the recollection of all who are at all familiar with the history of railroads for the last few years, that we are indebted to the Liverpool and Manchester Railroad Company's offer of £500 for the present degree of perfection to which locomotive power has been brought. If, then, the offer of a premium of £500 has done so much, what might we not anticipate if premiums of 5, 3, 2, and £1000 were offered for engines of the desired character, and powers, which can be kept in *repair* for one year, within a certain cost? By some, we doubt not, a prediction that locomotives will be constructed, within twenty years, to run upon an average thirty miles the hour, would be laughed at, yet such a prediction, if made, will be more than verified.

Increased Facilities for Travelling.—We learn that the Philadelphia and Trenton Railroad is completed from Trenton to Bristol, twelve miles, and that the section between Bristol and Philadelphia will be ready for use early in the spring. The New-Jersey Railroad, from Jersey City through Newark and Elizabethtown to New-Brunswick, is also progressing rapidly, and will, probably, be in use in the course of the ensuing summer. These roads when connected by a permanent *track road*, for which the timber is now landing at Trenton, as we are informed, which is to be laid on the turnpike between New-Brunswick and Trenton, to form the tracks, upon which locomotive engines or steam carriages may be used, will add another easy mode of travelling between the rival cities.

Advantages of Railroads.—The communication between this city and Philadelphia has been greatly improved within a few years. By the Camden and Amboy Railroad, since locomotive engines were put on, it is no difficult matter to leave Philadelphia after breakfast, and dine in New-York at 3 P. M. On Thursday last the distance was performed in 6 hours 35 minutes. It will be no uncommon thing next year, for New-Yorkers to visit Philadelphia, and *return the same day*.

Locomotive Engines.—The following account of the extraordinary performance of a locomotive engine is taken from the London Morning Post, furnished us by an intelligent gentleman, who takes great interest in the promotion of internal improvement. It shows conclusively, that we in this country are but just beginning to understand the importance of *locomotive engines*. Does it not show beyond a doubt that they are destined to effect as great improvement in our internal *land* communication, as the introduction of steamboats has upon our navigable rivers? Together with Railroads, locomotive engines are yet destined to make *neighbors* of those who now reside far remote from each other, and thereby produce a more permanent bond of union to the States than can otherwise possibly be effected.

The daily performance of the engines on the Liverpool and Manchester railway testifies the perfection which has been there attained in the conveyance of light goods and passengers, the ordinary rate of travelling being from 20 to 30 miles an hour; but they seem to be excelled by those in the neighborhood of Glasgow in another very important application of the power of locomotive engines, viz. the transmission of heavy goods, in which so great speed is not of such importance as the diminishing the expense of conveyance by increasing the quantity conveyed. The other day one of the engines on the Garnkirk and Glasgow railway, hauled a train of *seventy* loaded waggons from Gartkill colliery to the depot at Glasgow, a distance of 8 miles, in one hour and five minutes. The gross weight of the waggons was $287\frac{1}{2}$ tons, and of the engine and tender 14 tons 7 cwt., making a total weight of 301 tons 17 cwt. A great proportion of the distance is quite level. The ordinary resistance on a level line is nine lbs. per ton, so that the engine must have been exerting a power of about 27181 bs. The diameter of the cylinder is $12\frac{1}{2}$ inches, the length of stroke 22, and the pressure at 55 lbs. per square inch. The train extended over a distance of upwards of 270 yards, and presented to view a grand and interesting spectacle, while it afforded a most wonderful exhibition of locomotive power to those who take an interest in the important national question of the improvement of our internal means of communication.

The Saratoga Railroad Company have sent to England for another Locomotive Engine.—[Albany Daily Advertiser.]

Liverpool and Manchester Railroad.—This stupendous undertaking, which is justly entitled to the lead of all such works, and has the greatest traffic of goods and passengers of any line in the known world, yet its blemishes are of a corresponding magnitude. It is the most absolute monopoly that has been granted this century; its insecurity of travelling by night, and bungling inconveniences at the ends, two rises of more than one yard in a hundred suffered to remain upon it; the repairs of half a year for locomotive engines alone being upwards of £12,600, must prove to every one that ever saw a railroad, that something must be wrong, and as to the dividends of eight pounds or guineas per annum, they are futile when compared to the immense gross income. The dividends have a right to be more than double what they are when the enormous fares are considered.

Observations on Railways, with Hints to Railway Companies. [From the London Morning Chronicle of September 17.]

Mr. Editor,—The art of forming Railways and of enduing them, as means of transport, with the utmost degree of economy, velocity, and security, is yet in its infancy. To the promotion and construction of these works, or to the determination of their probable success, as durable fountains of profit, the thoughts and attention of engineers, of merchants, manufacturers, agriculturists, capitalists, indeed, of all the enterprising portion of the community, are as keenly directed as were the efforts of our immediate forefathers to the establishment of Canal Navigation.* The two most important enterprises of this nature now in activity—the Stockton and Darlington, and the Liverpool and Manchester Railways—have been highly lucrative from their outset: a fact, in the history of mercantile associations of this nature, as remarkable as it is encouraging. In a commercial sense, the objects of these two Railways are distinct; the one being limited, almost exclusively, to the transport of coal; the other combining the convenience of myriads of passengers, with the carriage of an infinite variety of merchandise. These two great, and hitherto successful, experiments may not be inaptly compared—as to their novelty, their purpose, their importance, and their results—to the two first specimens of artificial communication by water in this island, viz. the Sankey Navigation, and the Duke of Bridgwater's Canal. The comparison will hold good under each of these heads; and I confess that I am sanguine enough to think that the two Iron Ways will rival, in permanency of profit, the celebrated Waterways referred to; and, further, that Railways and Canals may co-exist, with fair gain to their respective proprietors. But, it behoves the authors of new and similar projects to inquire diligently into the particular causes of the success of these first experiments; to compare carefully the springs whence these parent Railways derive their traffic, with the sources relied upon as feeders to the projected lines; to investigate the most minute details of daily expense; to analyse rigidly the cause of wear and tear, as well as of all interruptions and accidents; in short, to make themselves as thoroughly masters of the subject, and to act with as much forethought and deliberation as an individual would do in a private venture. It is not upon the engineers that reliance should be placed for mercantile details or points of management; our business is simply that of workmen; it is upon mature and well-digested plans, aided by an EFFICIENT DIRECTION, that the prosperity of all associations of this nature must mainly depend.

Professionally uninterested in Railways, I am impelled to submit the following hints and observations to the attention of the public, and of Railway Proprietors, by an ardent desire to see Railway conveyance rendered as secure as it is expeditious; and by the conviction that this great desideratum is not only practicable, but that its accomplishment is essential to the lasting profit of such undertakings. The promotion of the interests of humanity is the true aim and end of science; and Great Britain can furnish abundant examples to show that mankind appreciates so accurately the value of whatever contributes to its welfare, that the greatest honors and fortunes commonly crown the exertions of those who are most successful in perfecting inventions for the use of man. I feel, then, that no apology can be required for the public expression of sentiments on subjects so interesting to society, and to ourselves, as the prosperity of a great enterprise, and the preservation of our own existence.

The Proprietors of a Railway are as deeply concerned in insuring, to the utmost of their means, safety of life and limb to travellers, as in economising their own expenditure. These are matters of weighty import to the Liverpool and Manchester and to other established Companies; but they are of still greater consequence to those recently created for uniting the metrolis, by similar means of transport, with the northern marts of commerce. The London and Birmingham, and the Grand Junction Railway Companies, cannot be too diligent in ascertaining the various causes of the casualties which have occurred in Railroad conveyance; they cannot be too careful to avoid, IN THE ORIGINAL PLAN OF THEIR RAILWAY, any defects which may have had a share in occasioning accidents or hindrances on those already executed. The two enterprises referred to will require millions of capital for their completion; it is probable that the conveyance of passengers and goods will encounter, on these greater lengths of line, multiplied difficulties and delays; and it is possible that yet undiscovered sources of personal danger may present themselves. Let it be borne in mind, too, that Railways, once laid down, cannot be altered in their dimensions like a turnpike road; tunnels, bridges, viaducts, &c. cannot be widened or narrowed at pleasure; the errors of their first formation will remain nearly, or altogether irremediable.

It will, I doubt not, be granted, by persons conversant with the subject, that the distance, FOUR FEET EIGHT INCHES, between the two lines of the Liverpool and Manchester Railway, has been found in practice most FATALLY limited, as, also, the pathway on either side of the lines. These scanty spaces render the descent of travellers from a carriage, or the unloading of a luggage wagon, not only dangerous, but nearly impossible, should an axle break, or other of the not unfrequent occasions for stoppage arise whilst passing embankments, or deep perpendicular cuttings. It is unnecessary for me here to particularise the many other inconveniences resulting from this, I fear, incurable fault in that railway.

The running of engines or carriages off the rails is another frequent cause of delay to trains of merchandise, as well as of danger to passengers, and inexpressibly awful would be the consequences were a train of coaches (suddenly diverted towards the other line, by some impediment on the road, or some derangement of the machinery) to encounter an engine proceeding in the opposite direction. Such a crash might indeed be disastrous! And who will be bold enough to affirm that so melancloly an event may not reasonably be expected, sooner or later, to occur?

I am not disposed, Sir, to imagine improbable, or barely possible catastrophes; nor do I desire to kindle, in the breasts of persons unaccustomed to travelling by railways, an apprehension that this mode of conveyance is attended with greater danger than the more usual ones. Such is not my opinion. On the contrary I believe that the records of travelling, either by land or by water, cannot supply data so satisfactory, on the score of safety to travellers, as those deducible from a comparison of the number of persons conveyed along the Liverpool and Manchester Railway with the number of accidents which have happened to them. But I do think that precautions might be, and OUGHT to be adopted, to check the recurrence of many accidents, particularly those, most to be dreaded, arising from engines running off the rails. I am aware that this has been very partially effected (at the Sankey Viaduct, and at one or two other spots considered as particularly dangerous) on the Liverpool and Manchester Railway, by a very simple and not costly contrivance, first applied along a high embankment on the Bolton and Leigh Railway. I allude to the introduction of a beam of wood, or continuous iron bar, placed parallel with and near to one of the rails on each line, of such height as to present a sufficient obstacle to the passage of wheels over it.

In laying down a new Railway, it would be well for Companies to consider, whether some such safeguard, extended throughout the line, should not form part of their original plan; whether twelve feet should not be allowed between the middle rails of a double Railway; and six feet for the width of pathway on either side. An additional defence against the possibility of collision between approaching trains might also be advantageously provided, by fixing a strong railing of moderate height along the middle of the roadway, and throughout the whole extent of the line. This railing would serve as a complete barrier to passengers crossing the road, to the imminent danger of their lives; and it might be so constructed as to form a support for a series of low lamps, which would, in every respect, be more suitable to Railways than elevated ones!

I cannot but think that had the width, above prescribed, existed between the two lines of the Liverpool and Manchester Railway, even without the safeguards mentioned, we should not have had to deplore the loss of *Mr. Huskisson*, and that the fatal calamity of the 1st of February last would not have been so extensive. Neither these nor other similar catastrophes could have occurred, or can occur, were a breast-high railing established between the lines.

The half-yearly Reports of the Liverpool and Manchester Railway Company are documents of inestimable value to all concerned in that or similar undertakings. The candid and just observations of the Directors of that Railway, in their last Report, leave no room to doubt that they are impressed with a due sense of the numerous defects of the engines now employed by them, and that they are not only on the alert to discover, but also well disposed to adopt, such improvement as may tend to diminish the cost of working, or to increase the performance of these machines. I fully concur in their remark, that "the locomotive engine is, beyond comparison, the most eligible, indeed the only efficient moving power for Railways;" nor can I refuse to accord to those Directors a full measure of praise for their sagacity in selecting this instrument as their motive force, in preference to horses or stationary engines, as well as for their fostering care of its infantine weakness. I am aware that an Edinburgh Reviewer, and other self-sufficient (perhaps, self-interested!) critics, have thought that, by ordering engines from every aspirant to locomotive glory, the Directors would have achieved still brighter conquests. I am not the panegyrist of the Liverpool Directors, but this opinion is groundless; and I do think that the learned Reviewer would act more creditably and usefully by confining himself to his compilations and cheap-knowledge books, than by giving public and anonymous vent to petty tales and slanders on the conduct and performances of men, whose practical science and labors have accomplished more in two years, for the benefit of their country, than all the scribblers in all the Reviewers will accomplish n two centuries.

The Locomotive Engine is a combination of the ideas and contrivances of many heads. That it should, with all its imperfections, have been brought to its present state of usefulness in so short a time, is highly creditable to the ingenuity and exertions of the Messrs. Stephenson, and of the other contributors to its actual mechanical form and powers. I know, however, that various very admirable schemes for increasing the power and durability of the boiler, as well as for improving the general arrangement and application of the engines, are contemplated by different contractors. But it is vain to expect that inventions, which may be termed rather skilful dispositions of parts than new discoveries, should see the light, when it is considered how heavy is the expense incurred by the engine-builder in experimenting on so costly an apparatus, how uncertain is his success, and how immediate would be the adoption of his improvements by his rivals in trade. Nor can any reasonable man urge the Directors of a Railway to speculate in inventions; but they may hasten their development, and appropriate them to their service; they may, through timely encouragement, anticipate, by many years, the fruits of mechanical skill, and brighten the prospects of their own and similar enterprises

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* The canalization of Great Britain has, in fact been accomplished within the memory of man; for there still lives one of the original proprietors and chief promoters of the Sankey Canal Navigation—the first artificial waterway in this island. I mean Nicholas Ashton, Esq. of Woolton, near Liverpool, now at the advanced age of ninety years. This canalized brook conveys the coal from the pits about St. Helens to the Mersey, near Runcorn. A railway has recently been opened between the same points, which will, probably, contend as successfully against its aqueous opponent, as does the Stockton and Darlington against the rivers and canals in its neighbourhood.

The Directors of the Liverpool and Manchester Railway will, I trust, pardon me for suggesting to their consideration a measure which might possibly accelerate the march of improvement, and, at the same time, diminish, in no slight degree, the amount of that weighty item in their disbursements, "Locomotive Power." I advise them to repeat the trial of what they themselves have correctly styled a "happy expedient;" I mean that they should renew the offer of a reward for that engine which shall unite, in the most eminent degree, the now well-ascertained requisites to its perfection. Let the prize contended for be worthy the acceptance of engine-makers; let it be such as, to induce them to risk a failure in the strife; and such as, in the event of success, will constitute, an ample remuneration for their skill and labor. I feel confident that the offer of One Thousand Guineas reward to the victorious candidate in such a contest, would be attended with results not less beneficial to Railways at the present era, than were those which came out of the first famous mechanical combat.

It appears that the working and repairs of the locomotive engines, on the Liverpool and Manchester Railway, cost, annually, about £24,000, or, in other words, THE STARTLING SUM OF £800 PER MILE, PER ANNUM, on the length of their line. Two-thirds of this amount are comprised under the sole head of repairs; to which outgoings should be added the interest upon, and depreciation of, a large stock of tools and materials, composing the workshops and hospitals; the latter of which are commonly filled to over-flowing with sick or disabled Locomotives. Surely, then, one thousand, or even two thousand guineas, might be well applied in the endeavor to diminish so large a draught from the profits of the Company, for wear and tear is an absolute and irrecoverable loss.

I will now proceed to trace the outline of the broad principles on which such a trial of skill should be conducted; a trial which would bring competitors to the goal, the productions of whose efforts would far more than compensate the Company for the value of the stake.

I assume, as postulates, that the average weight of the best engines now on the Railway is sufficiently great, and that two eleven-inch cylinders, working under a pressure of steam of fifty pounds per square inch, are found to possess sufficient power. I then suggest, as bases, the following conditions:

1. That the maximum weight of the competing engines shall not exceed that of the best engine in the Company's employ.

2. That the maximum pressure of the steam shall be fixed, and shall be alike in all the engines; and that the calculated power shall be equal to that of two eleven-inch cylinders, with an 18-inch stroke, working under a pressure of steam of 50 lbs. per square inch.*

3. That all the competing engines shall commence working on a given day: their duty to be that of making complete trips, during a given period, between Liverpool and Manchester reciprocally, with trains of merchandise of a determinate and ascertained weight.

4. That in the event of EQUALITY of PERFORMANCE between any of the competing engines, or between them and any of those in the Company's employ, their RELATIVE powers and properties shall be decided by subjecting them to a proof of their ABSOLUTE powers and properties; and that this shall be the conclusive trial.

5. That one thousand guineas shall be awarded to the constructor of that engine which shall have proved itself superior both to all its competitors, and to any engine in the Company's use: that the Company shall purchase such engine for the sum of one thousand guineas, and order from its maker the next five engines which they may require.

6. That five hundred guineas shall be awarded to the maker of the second best engine, provided it be adjudged to possess advantages over the Company's engines; and that the Company shall purchase such engine at a fair valuation.

Every facility should be given to the candidates, previous to the trial, to prove their engines on the line, either with or without loads, subject to the convenience and rules of the Company. Twelve months should elapse between the publication of the challenge and conditions, and the day on which the competitors shall enter the lists.

I have recommended the Liverpool and Manchester Company the more especially to institute this trial, as their railway is in full operation, and consequently they would the sooner reap the advantages of those results, which cannot but prove important to them. But the scheme applies with equal force to all Railways, and, were a combat of this nature to take place on the opening of a new line, and PERIODICALLY on different lines, the whole engineering talent of the country would feel its stimulus, and be pressed into the service of Railways.

In furtheranee of this design—viz., that of exciting the mechanical world to the improvement of Locomotive Engines, and of Railway conveyance generally—too great publicity cannot be given to all facts tending to illustrate the excellencies and defects of the existing system. A register should be kept and periodically published of the duty done by the engines. In one table might be presented a list of the engines in the employ of a company; the makers' names; the date of their use; the construction of the boiler; specifying whether with or without tubes; the diameter of the cylinders, and length of stroke; whether placed horizontally, vertically, or inclined; whether working on a cranked axle or otherwise; whether actuating two, or all four wheels, and their size, &c.; the pressure of the steam, the kind and weight of fuel burnt; the nature and amount of work done; the injuries sustained, and from what causes; the number of hours actually worked in a week, &c. &c. Such are the data which ought to be collected and analysed by the judicious engineer before he decides on his plans and executes an engine; but these facts are obtained with difficulty. It is, indeed, impracticable for any other than the mechanic residing contiguous to a Railway, to acquire that precise information on the respective merits of the various forms of locomotive engines in actual use, which can alone instruct him how to remedy the defects, and by what means to diminish the wear and tear of these costly machines.

A concise summary of the principal properties of a variety of engines, accompanied by a notice of their performance; of the casualties to which they have been subjected; of the parts which have needed repair or been renewed; arranged in a tabular form, and published MONTHLY, would give to the engineer, at one glance, more exact and valuable knowledge than could be acquired by him were he to pass his whole time on a Railway. It would stimulate the engine-men to be cleanly and diligent, as their reputation would be thus identified with that of their engines. They would become more observant of incipient imperfections, such as leakages, the loosening of bolts, the want of oil to the wearing parts, the waste of water in the boilers, the stoppage of the pumps, &c. &c. and they would be more sedulous in preventing gross repairs, by timely precautions, were their too-often culpable negligence made notorious.

Of the efficacy of publicity in promoting a rapid advance towards perfection in the use of Steam Power, we have a case in point, from the effects produced by the printed monthly reports of the duty done by the pumping-engines in Cornwall. An inspection of the summary table for a series of years, given in Mr. John Taylor's "Records of Mining," will convince the most sceptical of the advantages which have accrued to the miner from this system. He will there learn that a bushel of coals, which, a few years since, raised only SEVENTEEN millions of pounds weight of water one foot in height, is now made to raise EIGHTY millions of pounds to the same height. This immense increase in the effective performance of the pumping-engine is chiefly attributed to the publicity given to the construction of various engines, and to the modes of applying their power. The same instrument, the Press, is now working a similar miracle in the mining districts of North Wales; and it may be rendered equally as effectual an agent in accelerating the perfection of Locomotive Engines and of Railway conveyance.

Facts of a still more interesting nature to the public might also be periodically communicated, not only without detriment to the proprietors of Railways, but to their manifest advantage. I refer to the accidents occurring, from time to time, to those employed or travelling on these roads. In the want of an authentic record of such casualties, (excepting in the event of loss of life,) any ill-informed gossip, or penny-a-line man, becomes the bearer of his version of "A DREADFUL ACCIDENT ON THE RAILWAY" to a newspaper editor, which goes the round of the journals, and "frights the isle from its propriety." Be such tale true or false, correct or exaggerated, the reputation of the Railway equally suffers. An antidote should be instantly applied, and this antidote would be found in a simple unvarnished statement of the case emanating from the Directors, and published by their authority. I could quote numerous instances illustrative of the truth of these remarks, and am acquainted with many persons whose natural timidity has been so excited by such garbled reports of accidents, as to deter them from venturing on a Railway. But were a full and explicit statement published of every occurrence of this nature worthy of note, accompanied by a proper explanation of its origin, the public would not be unduly alarmed, precautions would be enforced, and means would frequently be devised for removing some of those imperfections which still disfigure Railway conveyance; imperfections arising often from original bad construction, often from mismanagement, and which are the causes (though happily rare) of disasters to passengers.

In the persuasion that you, Sir, are ever ready to lend your columns for the advancement of knowledge and the arts, I do not hesitate to request your insertion of these hints and observations, should you deem them suited to their object, and likely to promote the perfection of a system of travelling, of which the town of Birmingham is about to become a centre. I am, Sir, your obedient servant,

A Civil Engineer.

Mr. Symington, the Original Inventor of Steam Vessels. By Robert Bowie. [From the United Service Journal, for September.]

Mr. Editor,—The article concerning steam navigation contained in your last Number has afforded me no little pleasure, as it assists materially in establishing the justice of the claims I am now engaged in advocating on behalf of a highly-talented and deeply-regretted relative, the late William Symington.

To alter the opinion of your intelligent and impartial contributor, with regard to Mr. Hulls, will, I am pursuaded, require but examination of the mode proposed for constructing the machinery and applying the power of steam,—a mode which has been pronounced, by skilful and practical mechanicians, visionary and impracticable.

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* That the greatest latitude of construction may be given to engine-makers, the dimensions of the cylinders should not be prescribed, merely the calculated power resulting from the bulk of steam consumed by the number of strokes of the pistons per minute. This is requisite in order to insure a fair trial, as all the engines, whatever may be their construction, should be on precisely equal terms as to their NOMINAL power; otherwise a proof of their ABSOLUTE power would not be conclusive in regard to their RELATIVE merits.

As to the Marquis de Jouffroy, his experiments are so completely unknown, that, for any benefit derived from them, they might as well never have existed. And it is the general belief respecting them that they were incomplete, and unfit for bringing the undertaking to a favorable conclusion. That such a belief was not unfounded may be inferred from the imperfect state of the steam-engine of that day, and the failure of the subsequent and imitative attempts said to have been made by De Blan and Fulton; the latter of whom, Fulton, was only able to accomplish his object after having had an opportunity of minutely examining Mr. Symington's boat, receiving explicit answers to printed questions, and jotting down his observations as he was carried along the canal on board of the vessel.

Contending, therefore, that the mere idea of the practicability of steam-navigation, without the ability for its realization, possesses but little if any value, I feel myself warranted in claiming for him who first successfully applies the power of the steam engine for the propulsion of vessels, the honor and credit of the invention; and I feel myself warranted in my proceeding, by the firm conviction that he was indebted to no one for the idea, it having occurred to himself long before he became aware of its ever having been entertained by others.

In 1784 he imagined it possible for steam power to be rendered applicable to terro-locomotion; and in 1786, he exhibited in Edinburgh a working model of a steam-carriage. He then bethought himself that the same power might be rendered available for propelling vessels. His first boat appeared on Dalswinton Lake, in 1788, and his second on the Forth and Clyde canal the succeeding year. Both of which as completely illustrated the practicability of steam-navigation as any ever since exhibited.

In your Magazine it is stated that the first boat appeared in 1789, on the Forth and Clyde canal, and resembled Hull's, in being a tug. This is an error, as neither the one of 1788, nor that of 1789, at all resembled the boat proposed by Hull; nor were they intended to be used solely as tugs; and furthermore, the first never made its appearance upon that canal. It was the vessel constructed twelve years afterwards for Lord Dundas, which was designed to be used for dragging shipping, a purpose which, on several occasions, she satisfactorily and successfully executed.

It has been attempted to represent the whole of these experiments as failures; but too much respectable and unquestionable evidence can be adduced in their favor to render any hostile assertions likely to be either accredited or believed—the more especially, as many practical, well-informed engineers have declared their conviction that the machinery was well contrived, and its mode of application most ingenious. Indeed the declaration may at once be hazarded, that in several important points it possessed many advantages over that which is even at present employed. And it may also be averred, that to be more highly prized, it needs but to be better understood.

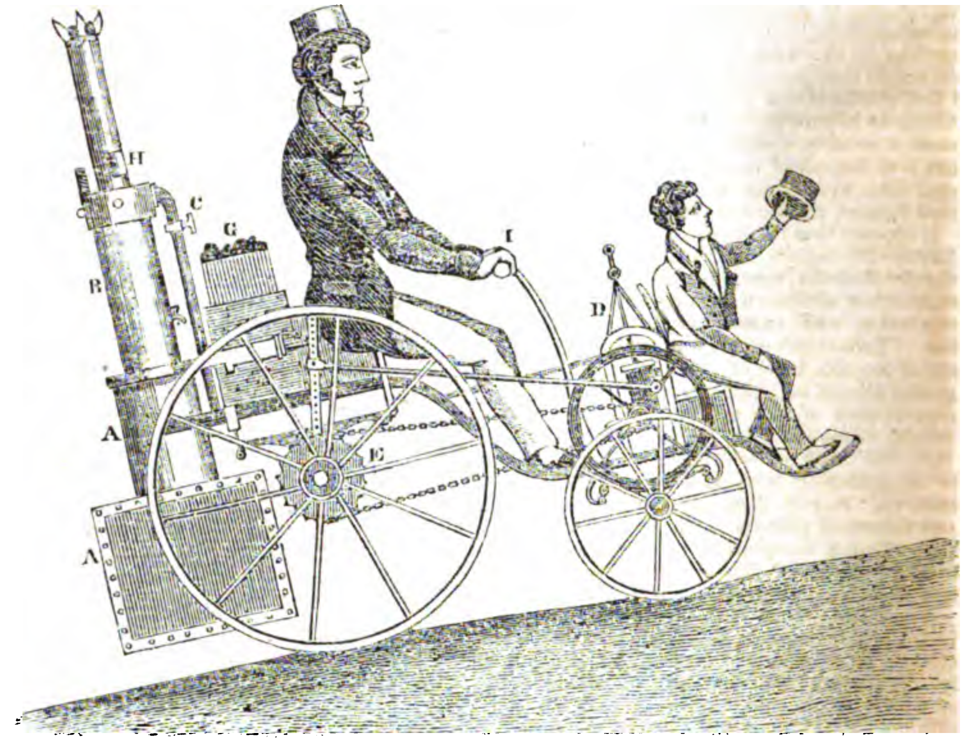
As a proof of Mr. Symington's ingenuity, and of the obstacles which genius will surmount, may be mentioned, that although Mr. Hull's patent rights were said to have been prestrained, strictly guarded, and rigidly enforced, Mr. Symington invented and brought into use an improved steam-engine, which was more simple, manageable, and economical for many purposes than that of his celebrated contemporary and competitor, without, in the slightest degree, rendering himself liable to the charge of encroachment. And he gave still further evidence of inventive powers by *dismissing the beam*—a desideratum so important as to have called forth the following opinion from the writer of the article which has led to this communication. "And if the beam shall ever be dismissed, and a rotatory motion obtained, the triumph over inertia and friction will raise the wonder still higher."

I have the honor to be, Sir, your most obedient servant,
ROBERT BOWIE.

[*From the Mechanics' Magazine.*]

TRAVELLING BY STEAM ON COMMON ROADS.—Although the state of the roads in this country will not at present allow us to be very sanguine of the advantages to be derived from carriages propelled by steam, we are satisfied that our readers will be gratified to possess a record of what is doing in other countries, and we hope it will rouse them to fresh exertions in promoting internal improvements here. The annexed account of the "Triumph" steam carriage, from a recent number of the London Mechanics' Magazine, will be read with interest, as also the observations it has elicited from two most valuable correspondents to that journal. One of them, Mr. J. O. N. Rutter, has been for several years looked up to as an authority on most subjects connected with engineering. He claims to be the inventor of a method of substituting water for fuel in steam engines, alluded to at page 117, Vol. II. of this Magazine, and has stated that it has succeeded equal to his most sanguine expectations at the gas works in Lymington, of which he is the superintendant.

If our information is correct, we shall have it in our power to prove that the credit of the invention is due to an American citizen; and a patent was taken out for it in 1817, by Mr. James Morey, of New-Hampshire. Why it has not been acted upon we are at present uninformed, but we hope in our next to be able to give a full description of it, accompanied with such drawings as may be requisite.—[ED. MECH. MAG.]



The Triumph Steam Carriage. [From the London Mechanics' Magazine.]

SIR,—I did not intend to send you the prefixed rough drawing of my little Triumph steam carriage until I could faithfully inform you of its full powers, in regard to speed and weight propelled; but, from considerations of expense and ill health, delay succeeds to delay until I fear some claims of priority, which I pretend to, may be denied to me. It is the little carriage, (built in 1828, and first mentioned in your Journal of 29th May, 1830,) improved in construction, but the same in principle, and which was the first that ever ascended a rise of one in six; the chief alteration is the application of two main levers, to obviate the necessity of having very large wheels.

It is built on what I at present consider the best principles of my theory, namely, placing nearly the whole weight, when in motion and needful, on the propelling wheels, giving a varying leverage to the power, to any required extent, and making the line of direction of the power, when acting on the propelling wheels, to be such that its action and re-action shall as near as possible be parallel with the line of progress, by causing the fore carriage to have a tendency by its weight to propel the hinder part.

The main axle, wheels, and springs of this carriage, are so attached to the carriage frame that they can be shifted backward or forward to vary the centre of gravity of the whole at pleasure, and also keep the endless chain stretched.

A A is the tubular boiler; B, tubular chimney and steam chest; C, steam pipe, cased deep in flannel, &c.; D, a pair of cylinders, pistons, &c. working an endless chain wheel on the crank shaft and two small fly-wheels; E, another endless chain wheel, either fast or loose on the main axle; F, a pin on each fly-wheel, working alternately two main levers, that catch in two clutch wheels fixed on the main axle; G, coke box and water cistern; H, feed door in the chimney; I, pilot pole.

As soon as the engines start, the pins F on the fly-wheels begin, by means of the connecting rods, to pull at the main levers, which levers, by a re-action (if they are in gear), have a tendency to lift the fore carriage off the ground. (I have seen it thus lifted quite off.) By this operation the weight of the fore carriage is partly thrown on the hind wheels, increasing their interlocking force with the ground, and at the same time tends to pull them round by its gravity. *Note*, I do not mean to say that power is thereby gained, as all power comes from the steam, but that the power is acting in its best direction, being a transfer of the power of the steam to the gravity of the fore carriage, as the steam, with a varying leverage, cannot well act direct on the main axle. When the road is level and good, the main levers are in a few seconds put out of gear, and the unvarying endless chain, E, put in.

I would say a word or two to Mr. Alexander Gordon and the *ultra* locomotionists. Steam locomotion on common roads is no longer a question of possibility, but of economy. Messrs. Ogle and Summers could tell, if they would, how much cheaper (or dearer) they went to Liverpool by steam than if horses had taken them (including wear and tear, but rejecting accidents); and Sir C. Dance could state his profits on the Cheltenham road. Both these and other parties richly deserve public assistance. But no! somebody will have a monument when dead, but no help whilst living. Yet the public is not to blame: for to whom of the many projectors must it extend its bounty?

There was once a carriage and four horses went twenty miles an hour, at Newmarket, for a wager, and won it, yet the mails still are conveyed at half that speed. These Ultras forget that steam pistons cannot go more than 2½ miles an hour, and at that rate they will, like a horse, do a great deal of work; but if they must propel any thing at 20 miles an hour, they must either have little to propel or there must be a great many of them; and the question is, can these many be kept cheaper than horses? This waits for proof. Locomotion is a darling theme of mine, but I have paid my visit to *Utopia*, and am come back. I wish again and again some one would build an 8 or 10 horse-power steam drag, to work one of the stage waggons at about its present rate of going, and then see what power could be spared for increasing the speed. SAXULA.

March 14, 1833.

SIR,—"Saxula" has named his carriage the "Triumph"; but I shall not consider the triumph complete until he has run it daily for six or twelve months on a common road, and given an accurate statement of the costs arising from wear and tear, fuel, attendance, and interest of capital. It is no proof that the anxiously desired object has been attained,—of running steam carriages on common roads,—because a carriage has been constructed that will run a certain distance at a certain rate, with a certain number of passengers or tons of merchandize. Many important undertakings have proved splendid failures, simply, as I conceive, on account of the conditions implied in their principle being imperfectly understood, or totally neglected. The necessary conditions for locomotive carriages on common roads may, I think, be clearly ascertained by a careful attention to those employed on railroads. If the published statements in reference to the engines at work on the Liverpool and Manchester railroads are to be credited, it appears that, with friction and abrasion at a minimum, those engines involve a prodigious outlay of capital in their original construction and in their subsequent repairs. Now, supposing it should be found advisable to go to a considerable expense in the construction of any future railroad, either in polishing it or in having a double line of road, each inclining throughout its whole length, but in opposite directions; and if, by these or any other arrangements, it should be found that the first expense of engines and their subsequent wear and tear would be thereby reduced, should we be any nearer than we are at present to turnpike road engines? I rather think we should be farther off than ever. On railroads, the friction, the agitation, and the consequent abrasion of surface, are found to be the chief impediments to success. How, therefore, can we expect to succeed, where we have to contend with more friction, more agitation, more abrasion, and, last, but not least, inequalities of surface, which do not exist on railroads? Far be it from me to think or say that the object is unattainable; many more unlikely things have happened, and will doubtless continue to do so almost every day. But we never can move safely towards a result until we thoroughly understand the principles of our experiment, and make ourselves conversant with its conditions. I wish "Saxula" success, and I sincerely hope he will favor your readers, from time to time, with the data he obtains in his experiments on this interesting subject. J. O. N. RUTTER.

April 18, 1833.

SIR,—Some time has now elapsed since you favored me with the insertion of a few lines on long and short cranks, which I hazarded in opposition to the theory of locomotion promulgated by your ingenious correspondent "Saxula," in which I promised the result of a series of experiments I had then in contemplation, but which I have been unable to accomplish, from want of time, change of residence, &c. Trusting, however, that my not having fulfilled my engagement may not debar me from your pages, I beg, as a constant reader, to offer a few remarks which have suggested themselves since reading the account of the "Triumph Steam Carriage" in your Journal of the 6th of April last.

I am still at a loss to comprehend what advantage "Saxula" anticipates from the use of the main levers over that of an ordinary crank, save that he will by that means be able to increase his power at a very great reduction of speed, and, I conceive, a great waste of power at the same time. In the first place, does he mean to deny that a short crank would accomplish the same end, provided the power were increased in due inverse ratio, and to uphold that more can be accomplished by the use of long cranks, or *main levers*, than by short ones? If so, I need say no more, for of that I shall never be convinced. Again, if the adhesion between the periphery and the road be sufficient to enable him with his long lever to lift the fore carriage off the ground, where is there any necessity for an increased resistance or *interlocking force?* Such a tendency would only cause a loss of power and straining to the machinery, besides which there would be an irregularity in the motion of the vehicle, which would also be attended with very serious waste of power, arising from the reciprocal action of the main levers. Although "Saxula" may have accomplished the ascent of a hill, having an inclination of 1 in 6, I still maintain that the same thing might be accomplished by means of a short crank, provided the cylindrical power of the engine were increased proportionately. "Saxula" may perhaps here ask—but why cumber your engine with more power than is actually necessary? Let him make his engine on that principle, and run it on a road—not one rolled and brushed for the purpose—and he will soon find he will be "put to a stand still." Hills are not the only obstacles which present themselves (Mr. Gurney well knows this). Newly-formed roads, or repaired ones, are much more serious objections to steam carriages on common roads. We will suppose a road (as is often the case) repaired at intervals, of say a quarter of a mile—would the "staid and sure" pair of long levers be used? or alternately levers and cranks, to the great annoyance of passengers, and prejudice of the machinery? So many delays would completely do away with steam travelling, if there were no other objections to it.

But the objections to such a mode of conveyance on common roads, compared with railroads, are so numerous, and rendered so obvious by the daily experience on the Liverpool and Manchester railway, as to need but little comment. I understand the estimated cost of an engine for common roads, capable of conveying about 20 passengers, is £1,500, while the utmost speed which could with safety, or *otherwise*, be accomplished, would be 12 to 14 miles per hour. Now, an engine capable of conveying upwards of 300 passengers in covered carriages on a railway, at 20 miles per hour, costs only £800 or £900. The wear and tear of an engine on high roads is also very considerably greater than that on a railroad, owing to irregularity of surface. I believe at 15 miles per hour it would be 7 times greater, and the force of traction 12 times as great. Supposing, therefore, that only the same consumption of fuel should take place, the diminished number of passengers would, of course, raise the fares in due proportion. But certainly the expediency of using locomotives on common roads can only be proved or disproved by actual experience. I heartily agree with "Saxula" in wishing some practical results to be given forth by the numerous and extensive speculators in such machines. I am afraid "Saxula" will find himself in error, when he states that an engine of two horses' actual power will be able to accomplish the labor of two horses on common roads. This is daily proved to be impossible: even on a railroad a portion of power is lost by the re-action, or *backsliding* (if I may so term it), produced by the deposition of extraneous matter on the surface of the rail, which causes the wheel, or rather the engine, to retrograde in a slight degree. This I have proved very frequently when travelling on the above railway. I have in fine weather invariably found that 86 beats or strokes of the engine are necessary to traverse the distance between the ¼ mile distance accurately measured, thus proving that 2 revolutions are lost in each instance, the wheel being precisely 5 feet diameter. This I have observed at speeds of from 14 to 18 miles per hour. At 25 miles per hour nearly 4½ revolutions are lost. This, I think, would militate greatly against "Saxula's" two horses.

I am, sir, yours, &c.

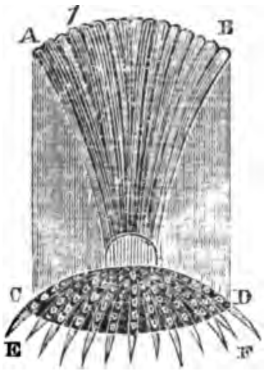
DUBITANS.

Liverpool, May 7, 1833.

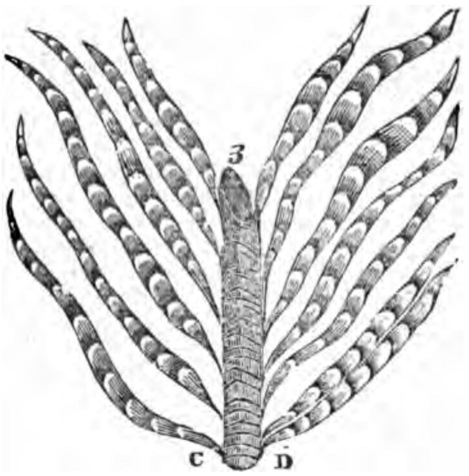
Wonders of the Microscope. [Arranged from Dr. Dick, on the Diffusion of Knowledge.]

In the universe we find all things constructed and arranged on the plan of *boundless and universal variety.* In the animal kingdom there have been actually ascertained about sixty thousand *different species* of living creatures. There are about 600 species of *mammalia,* or animals that suckle their young, most of which are quadrupeds—4000 species of *birds,* 3000 species of *fishes,* 700 species of *reptiles,* and 44,000 species of insects.* Besides these, there are about 3000 species of *shell fish,* and perhaps not less than eighty or a hundred thousand species of animalcules invisible to the naked eye; and new species are daily discovering, in consequence of the zeal and industry of the lovers of natural history. As the system of animated nature has never yet been thoroughly explored, we might safely reckon the number of species of animals of all kinds as amounting to at least *three hundred thousand.* We are next to consider that the organical structure of each species consists of an immense multitude of parts, and that all the species are infinitely diversified—differing from each other in their forms, organs, members, faculties, and motions. They are of all shapes and sizes, from the microscopic animalculum, ten thousand times less than a mite, to the elephant and the whale. They are different in respect of the construction of their sensitive organs. In regard to the *eye,* some have this organ placed in the front, so as to look directly forward, as in man; others have it so placed as to take in nearly a whole hemisphere, as in birds, hares, and conies; some have it fixed, and others moveable; some have *two* globes or balls, as quadrupeds; some have *four,* as snails, which are fixed in their horns; some have *eight,* set like a locket of diamonds, as spiders; some have several *hundreds,* as flies and beetles, and others above *twenty thousand,* as the dragon-fly and several species of butterflies. In regard to the *ear*—some have it large, erect, and open, as in the hare, to hear the least approach of danger; in some it is covered to keep out noxious bodies; and in others, as in the mole, it is lodged deep and backward in the head, and fenced and guarded from external injuries. With regard to their *clothing*—some have their bodies covered with hair, as quadrupeds; some with feathers, as birds; some with scales, as fish; some with shells, as the tortoise; some only with skin; some with stout and firm armor, as the rhinoceros; and others with prickles, as the hedgehog and porcupine—all nicely accommodated to the nature of the animal and the element in which it lives. These coverings, too, are adorned with *diversified* beauties; as appears in the plumage of birds, the feathers of the peacock, the scales of the finny tribes, the hair of quadrupeds, and the variegated polish and coloring of the tropical shell-fish—beauties which, in point of symmetry, polish, texture, variety, and exquisite coloring, mock every attempt of human art to copy or to imitate.

Not only in the objects which are visible to the unassisted eye, but also *in those which can only be perceived by the help of microscopes,* is the characteristic of *variety* to be seen. In the scales of fishes, for example, we perceive an infinite number of diversified specimens of the most curious workmanship. Some of these are of a longish form, some round, some triangular, some square; in short, of all imaginable variety of shapes. Some are armed with sharp prickles, as in the perch and sole;* some have smooth edges, as in the tench and codfish; and even in the same fish there is a considerable variety, for the scales taken from the belly, the back, the sides, the head, and other parts, are all different from each other. In the scale of a perch we perceive one piece of delicate mechanism, in the scale of a haddock† another, and in the scale of a sole beauties different from both.



We find some of them ornamented with a prodigious number of concentric flutings, too near each other and too fine to be easily enumerated. These flutings are frequently traversed by others diverging from the centre of the scale, and proceeding from thence in a straight line to the circumference. On every fish there are many thousands of these variegated pieces of mechanism. A small part of the feather of a peacock,‡ one-thirtieth of an inch in length, appears no less beautiful than the whole feather does to the naked eye, exhibiting a multitude of bright shining parts, reflecting first one color and then another in the most vivid manner. The *wings* of all kinds of insects, too, present an infinite variety, no less captivating to the mind than pleasing to the eye. They appear strengthened and distended by the finest bones, and covered with the lightest membranes. Some of them are adorned with neat and beautiful feathers, and many of them provided with the finest articulations and foldings for the wings, when they are withdrawn and about to be folded up in their cases. The thin membranes of the wings appear beautifully divaricated with thousands of little points, like silver studs. The wings of some flies are *filmy,* as the dragon-fly; others have them stuck over with short *bristles,* as the flesh-fly; some have rows of feathers along their ridges, and borders round their edge, as in gnats; some have hairs, and others have hooks, placed with the greatest regularity and order. In the wings of moths and butter-flies there are millions of small feathers of different shapes,* diversified with the greatest variety of bright and vivid colors, each of them so small as to be altogether invisible to the naked eye.



The variety of forms in which *animal life* appears, in those invisible departments of creation which the microscope has enabled us to explore, is truly wonderful and astonishing. Microscopic animals are so different from those of the larger kinds, that scarcely any analogy seems to exist between them; and one would be almost tempted to suppose that they lived in consequence of laws directly opposite to those which preserve man and the other larger animals in existence. When we endeavor to explore this region of animated nature, we feel as if we were entering on the confines of a new world, and surveying a new race of sentient existence. The number of these creatures exceeds all human calculation. Many hundreds of species, all differing in their forms, habits, and motions, have already been detected and described, but we have reason to believe that by far the greater part is unexplored, and perhaps forever hid from the view of man. They are of all shapes and forms: some of them appear like minute atoms, some like globes and spheroids, some like hand-bells, some like wheels turning on an axis, some like double-headed monsters, some like cylinders, some have a worm-like appearance, some have horns, some resemble eels, some are like long hairs, one hundred and fifty times as long as they are broad, some like spires and cupolas, some like fishes, and some like animated vegetables. Some of them are almost visible to the naked eye, and some so small that the breadth of a human hair would cover fifty or a hundred of them, and others so minute that millions of millions of them might be contained within the compass of a square inch. In every pond and ditch, and almost in every puddle, in the infusions of pepper, straw, grass, oats, hay, and other vegetables, in paste and vinegar, and in the water found in oysters, on almost every plant and flower, and in the rivers, seas, and oceans, these creatures are found in such numbers and variety as almost to exceed our conception or belief. A class of these animals, called *Medusæ*, has been found so numerous as to discolor the ocean itself. Captain Scoresby found the number in the olive-green sea to be immense. A cubic inch contained sixty-four, and consequently a cubic mile would contain 23,888,000,000,000,000; so that, if one person should count a million in seven days, it would have required that eighty thousand persons should have started at the creation of the world to have completed the enumeration at the present time. Yet, all the minute animals to which we now allude are furnished with numerous organs of life as well as the larger kind, some of their internal movements are distinctly visible, their motions are evidently *voluntary*, and some of them appear to be possessed of a considerable degree of sagacity, and to be fond of each other's society.*

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* Specimens of all these species are to be seen in the magnificent collections in the Museum of Natural History at Paris.

* Fig. 1 represents the *scale* of a *sole-fish* as it appears through a good microscope. C D E F represents that part of the scale which appears on the outside of the fish, and A B C D the part which adheres to the skin, being furrowed, that it may hold the faster. It is terminated by pointed spikes, every alternate one being longer than the interjacent ones.

† Fig. 2 is the scale of a haddock, which appears divaricated like a piece of net-work.

‡ Fig. 3 represents a small portion or fibre of the *feather of a peacock,* only one-thirtieth of an inch in extent, as it appears in the microscope. The small fibres of these feathers appear, through this instrument, no less beautiful than the whole feather does to the naked eye. Each of the sprigs or hairs on each side of the fibre, as C D, D C, appears to consist of a multitude of bright shining parts, which are a congeries of small plates, &c. The under sides of each of these plates are very darkand opaque, reflecting all the rays thrown upon them like the foil of a looking-glass; but their upper sides seem to consist of a multitude of exceedingly thin plated bodies, lying close together, which, by various positions of the light, reflect first one color and then another, in a most vivid and surprizing manner.

* Figs. 4, 5, 6, 7, represent some of the different kinds of feathers which constitute the dust which adheres to the wings of moths and butterflies, and which, in the microscope, appear tinged with a variety of colors. Each of these feathers is an object so small as to be scarcely perceptible to the naked eye.

In short, it may be affirmed without the least hesitation, that the beauties and *varieties* which exist in those regions of creation which are invisible to the unassisted eye are far more numerous than all that appears to a common observer in the visible economy of nature. How far this scene of creating power and intelligence may extend beyond the range of our microscopic instruments, it is impossible for mortals to determine; for the finer our glasses are, and the higher the magnifying powers we apply, the more numerous and varied are the objects which they exhibit to our view. And as the largest telescope is insufficient to convey our views to the boundaries of the great universe, so we may justly conclude that the most powerful microscope that has been or ever will be constructed will be altogether insufficient to guide our views to the utmost limits of the descending scale of creation.

We shall now continue our illustrations:

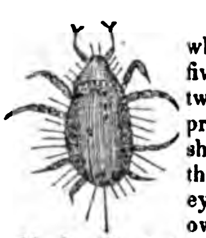


Fig. 1 represents a *mite*, which has eight legs, with five or six joints in each, two feelers, a small head in proportion to its body, a sharp snout and mouth like that of a mole, and two little eyes. The body is of an oval form, with a number of hairs like bristles issuing from it, and the legs terminate in two hooked claws.

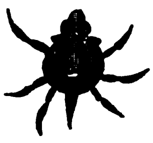


Fig. 2 represents a microscopic animal which was found in an infusion of *anemony*. The surface of its back is covered with a fine mask, in the form of a *human face*; it has three feet on each side, and a tail which comes out from under the mask.

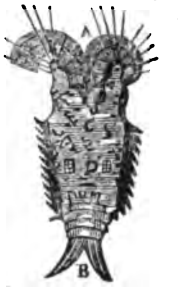


Fig. 3 is an animalcula found in the infusion of *old hay*. A shows the head, with the mouth opened wide, and its lips furnished with numerous hairs; B is its forked tail; D its intestines, and C its heart, which may be seen in regular motion. The circumference of the body appears indented like the teeth of a saw.

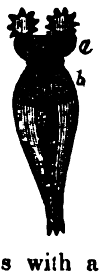
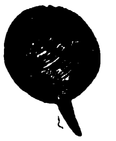


Fig. 4 shows the *wheel-animal*, or *vorticella*. It is found in rain-water that has stood some days in leaden gutters, or in hollows of lead on the tops of houses. The most remarkable part of this animalcula is its *wheel-work*, which consists of two semi-circular instruments, round the edges of which many little fibrillæ move themselves very briskly, sometimes with a kind of rotation, and sometimes in a trembling or vibratory manner. Sometimes the wheels seem to be entire circles, with teeth like those of the balance-wheel of a watch; but their figure varies according to the degree of their protusion, and seems to depend upon the will of the animal itself; *a* is the head and wheels, *b* is the *heart*, where its systole and diastole are plainly visible, and the alternate motions of contraction and dilatation are performed with great strength and vigor, in about the same time as the pulsation of a man's artery. This animal assumes various shapes, one of which is represented at Fig. 5, and becomes occasionally a case for all the other parts of the body.



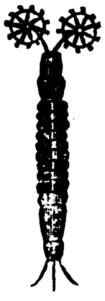
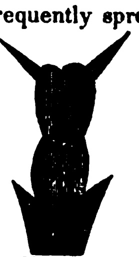


Fig. 6 represents *an insect with net-like arms*. It is found in cascades where the water runs very swif.. Its body appears curiously turned as on a lathe, and at the tail are three sharp spines, by which it raises itself and stands upright in the water; but the most curious apparatus is about its head, where it is furnished with two instruments, like fans or nets, which serve to provide its food. These it frequently spreads out and draws in again, and, when drawn up, they are folded together with the utmost nicety and exactness. When this creature does not employ its nets, it thrusts out a pair of sharp horns, and puts on a different appearance, as in Fig. 7, where it is shown magnified about 400 times.



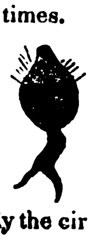


Fig. 8 is another animalcula, found in the same infusion, called a *tortoise*, with an umbilical tail. It stretches out and contracts itself very easily, sometimes assuming a round figure, which it retains only for a moment, then opens its mouth to a surprizing width, forming nearly the circumference of a circle. Its motion is very surprizing and singular.

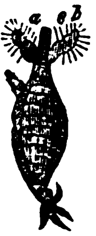


Fig. 9 is the representation of an animalcula found in the infusion of *the bark of an oak*. Its body is composed of several ringlets, that enter one into another, as the animal contracts itself. At *a b* are two lips, furnished with moveable hairs; it pushes out of its mouth a *snout* composed of several pieces sheathed in each other, as at *e*. A kind of horn, *d*, is sometimes protruded from the breast, composed of furbelows, which slide into one another like the drawers of a pocket telescope.

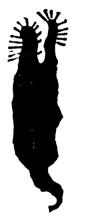
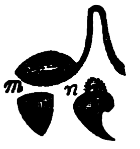


Fig. 10 is an animalcula, called *great mouth*, which is found in several infusions. Its mouth takes up half the length of its body; its inside is filled with darkish spots, and its hinder part terminated with a singular tail.



[Fig. 11 represents the *proteus*, so named on account of its assuming a great number of different shapes. Its most common shape bears a resemblance to that of a swan, and it swims to and fro with great vivacity. When it is alarmed, it suddenly draws in its long neck, transforming itself into the shape represented at *m*, and at other times it puts forth a new head and neck, with a kind of wheel machinery, as at *n*.

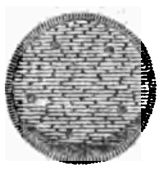


Fig. 12 is the *globe animal*, which appears exactly globular, having no appearance of either head, tail, or fins. It moves in all directions, forwards or backwards, up or down, either rolling over and over like a bowl, spinning horizontally like a top, or gliding along smoothly without turning itself at all. When it pleases, it can turn round, as it were upon an axis, very nimbly, without removing out of its place. It is transparent, except where the circular black spots are shown; it sometimes appears as if dotted with points, and beset with short moveable hairs or bristles, which are probably the instruments by which its motions are performed.

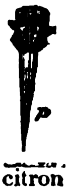


Fig. 13 shows a species of animalculæ called *soles*, found in infusions of straw and the ears of wheat; *o* is the mouth, which is sometimes extended to a great width, *p* is the tail.

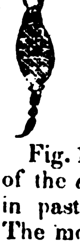


Fig. 14 represents an animal found in an infusion of citron flowers. Its head is very short, and adorned with two horns like those of a deer; its body appears to be covered with scales, and its tail long, and swift in motion.

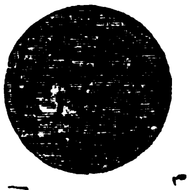


Fig. 15 is a representation of the *eels* which are found in paste and stale vinegar. The most remarkable property of these animals is that they are *viviparous*. If one of them is cut through near the middle, several oval bodies of different sizes issue forth, which are young *anguillæ*, each coiled up in its proper membrane. A hundred and upwards of the young ones have been seen to issue from the body of one single eel, which accounts for their prodigious increase.

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* The following extract from Mr. Baker's description of the *hair-like animalcule* will illustrate some of these positions. A small quantity of the matter containing these animalcules having been put into a jar of water, it so happened that one part went down immediately to the bottom, while the other continued floating on the top. When things had remained for some time in this condition, each of these swarms of animalcules began to grow weary of its situation, and had a mind to change its quarters. Both armies, therefore, set out at the same time, the one proceeding upwards and the other downwards; so that after some time they met in the middle. A desire of knowing how they would behave on this occasion engaged the observer to watch them carefully; and, to his surprize, he saw the army that was marching upwards open to the right and left, to make room for those that were descending. Thus, without confusion or intermixture, each held on its way; the army that was going up marching in two columns to the top, and the other proceeding in one column to the bottom, as if each had been under the direction of wise leaders.

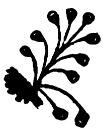


Fig. 16 exhibits a species of animalcula shaped like bells with long tails, by which they fasten themselves to the roots of *duck-weed*, in which they were found. They dwell in colonies, from ten to fifteen in number.

It may not be improper to remark, that no engraving can give an adequate idea of the objects referred to above; and, therefore, whoever wishes to inspect nature in all her minute beauties and varieties must have recourse to the microscope itself.

What we already know of these unexplored and inexplorable regions gives us an amazing conception of the intelligence and wisdom of the Creator, of the immensity of his nature, and of the infinity of ideas which, during every portion of past duration, must have been present before his all-comprehensive mind. What an immense space in the scale of animal life intervenes between an *animalcule*, which appears only the size of a visible point, when magnified 500,000 times, and a *whale*, a hundred feet long and twenty broad! The proportion of bulk between the one of these beings and the other is nearly as 34,560,000,000,000,000,000 to 1. Yet all the intermediate space is filled up with animated beings of every form and order! A similar variety obtains in the vegetable kingdom. It has been calculated, that some plants which grow on *rose* leaves, and other shrubs, are so small that it would require more than a thousand of them, to equal in bulk a single plant of *moss;* and if we compare a stem of moss, which is generally not above one-sixtieth of an inch, with some of the large trees in Guinea and Brazil of twenty feet diameter, we shall find the bulk of the one will exceed that of the other no less than 2,985,984,000,000 times, which multiplied by 1,000 will produce 2,985,984,000,000,000, the number of times which the large tree exceeds the rose-leaf plant. Yet this immense interval is filled up with plants and trees of every form and size! With good reason, then, may we adopt the language of the inspired writers,—"How *manifold* are thy works, O Lord! In wisdom hast thou made them all."

To the Editor of the American Railroad Journal:

PHILADELPHIA, Oct. 24th, 1833.

SIR,—Should you think the following suggestion worthy your notice, I would be much obliged to you to call the attention of some of your scientific and mechanical correspondents to it, through the columns of your valuable Journal. I have lately been desired by a friend in London, to forward to him some particular accounts of the different steamboats now in operation in waters near you, and particularly, on the Hudson, and of recent experiments, &c. &c.; but I have as yet not been able to find any work on the subject, which contains the desired information; and further, on examining all the different works that *touch* on the subject, I perceive they merely tell of wonderful experiments made *in England*, and in my opinion, these whicd are recorded as *wonderful* are not to be mentioned in the same day, with those practical machines now in daily use on our waters, and I am persuaded that should some person, fully competent, publish a small work containing a precise account of the different engines and boats now in operation, say on the Hudson and East rivers, that they would receive ample compensation from the sale of the work, as well as confer a lasting favor on the reading public. I wish to see our own splendid engines and boats recorded as being something worthy of American industry. Your friend and subscriber,

G. W. A.

We cheerfully give place to the above communication, with a hope that it may induce some one familiar with the subject to supply a work of the character referred to; and will endeavor, if no one else is disposed to undertake it, to obtain, and publish in the Journal, some account of our best steamboats, both on the North and East rivers.

[For the American Railroad Journal.]

MR. EDITOR,—Should the Boston and Providence Railroad Company refuse, on equitable terms, to unite with the Rhode Island Railroad Companies, would it not be desirable to the Worcester Railroad Company, much of the stock of which is owned in this city, to unite their road to the Providence and Boston Railroad, by a branch intersecting their road near Boston, striking the valley of the Charles river, and through Wrentham to the line of the State of Rhode Island; and by making terms with the Providence and Boston Company, who have twelve miles exclusive privilege, commencing at Fox Point, would be enabled to command the principal travel on this great thoroughfare from Boston to Providence and Long Island Sound. A privilege to make said branch no doubt could be obtained of the Legislature of Massachusetts. X.

[*From the Mobile Register and Patriot of 24th Oct.*]

MARINE RAILWAY.—A model of a newly constructed Marine Railway has been left at our office by Lieut. Gedney of the United States navy for the inspection of the public. We understand that it has received the decided approbation of the Board of Navy commissioners, as well as of practical mechanics who have examined it, and that measures have been taken for testing its value by a Gentleman at Charleston who is erecting a railway on a scale sufficiently large to haul up ships of any size. The principle and the machinery are extremely simple, and we would invite the attention of those interested in the establishment near this city to the model now on the table of the Reading Room.

Bristol and London Railway.—The people of Bristol are going to make a bold effort to restore the prosperity of that once flourishing and still important city, by forming a railway thence to London. It is calculated that this undertaking, which is to be called the Great Western Railway, will cost three millions, to be raised in shares of £100 each. The formation of such a line of communication will be of great utility, not only to Bristol, but to the whole of the west of England, and to the southern counties of Ireland and Wales. The intercourse and traffic along it will be immense. The passengers between London and all parts of the counties of Berks, Wilts, and Gloucester, Heveford, Monmouth, Glamorgan, Somerset, Devonshire, Cornwall, and a very large portion of those from the south of Ireland will travel along it. Amongst the cities and towns it will touch, or be likely to be united with by branch roads, are Windsor, Oxford, Reading, Newbury, Sallsbury, Marlborough, Bath, Bristol, Gloucester, and Merthyr Tidvil, whilst all other travellers proceeding to London from Bridgewater, Taunton, Exeter, Plymouth, Falmouth, and the other towns of the west will avail themselvs of it from Bristol to the metropolis. The Irish counties principally benefited will be those lying to the south of Dublin. Amongst the most important articles in the carrying department will be the agricultural produce of Berks and Wiltshire, the woollen manufactures of Gloucester and Somersetshire, the iron and coal of south Wales, the West India and other produce imported into Bristol, and the corn and cattle of Wexford, Waterford, Cork, &c. When the railway is formed, of which there is little doubt, Bristol will be one of the greatest thoroughfares in the British dominions.

CORNS.—A piece of moistened tobacco, and bound around the toe, is recommended by the New-Hampshire Spectator, as a sure cure of corns.

AGRICULTURE, &c.

[*From the New-York Farmer.*]

Cultivation and Drawings of Gama Grass.

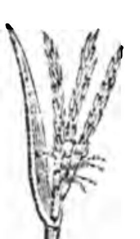
By the EDITOR.

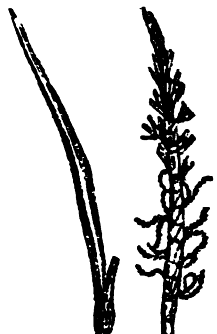
Within three or four years much attention has been excited respecting this grass, particularly in the Southern States. Dr. Hardeman, of Missouri, was among the first to bring it before the public as a prolific grass, and one of immense importance to the Southern section of the Union, where corn stalks or leaves are almost the only fodder for live stock. It is considered to be a native of the alluvial soils of the Southern States, but is found growing wild as far north as the banks of the Connecticut river. It succeeds well on sandy, and even barren soils.

The seeds are put in drills 18 inches apart, and the plants should be hoed sufficient to prevent the growth of weeds. The first season they spread and cover the whole surface. During the second, they are cut once a month from May or June to October or November. Being a perennial, it will probably continue to produce for several years without renewal. Those who are zealous advocates for the introduction of this grass into Southern husbandry in particular, say that it will produce 70 to 80 tons of green hay, or 20 to 30 of cured hay to the acre.

Some botanists describe four species of Tripsacum, but that called Gama Grass is supposed to be the T. monostachyon; others enumerate only three, and, in the opinion of some writers, two of these are identical. Professor Eaton describes only two, considering the T. monostachyon a variety of the T. dactyloides.

The following drawings we take from the Encyclopædia of Plants—the smaller engraving is the T. dactyloides, and the others the T. monostachyon:





THE PROFESSION OF A FARMER.—The North American Magazine, reviewing P't Lindsley's address, which we noticed in former numbers of the Farmer, makes the following extract and comments:

"I have long thought that our college graduates often mistake their true path to honor and usefulness, in making choice of a learned profession, instead of converting agriculture into a learned profession, as it ought to be, and thereby obtaining an honest livelihood in the tranquil shades of the country."

In the praise of Agriculture he might have gone further, and extolled it as an occupation at once sublime and useful—which ennobles man, gives peace to his mind, virtue to his heart, placidity to his countenance, and calmness to his passions. Absorbed in the holy contemplation of mute but eloquent Nature, or engrossed in the avocations that give sustenance and comfort to his fellow beings, he is equally blessed in the fruit of his labors or the fragrance of his meditations.

Cultivation of Silk in the Northern Part of the United States.—The numerous and detailed experiments which we have from time to time laid before our readers, on the subject of silk culture, must have convinced them that no obstacle exists to the successful prosecution of this great and important branch of domestic industry. The following experiment, from the N. H. Spectator, made by Dr. Frost, of Plainfield, N. H., in the latitude of 43°.30, not only establishes the fact that the worm will perfect its cocoon in the Northern States, but that the whole business is perfectly simple. He states that he had no knowledge on the subject from personal experiment and observation previously to his present undertaking. The Doctor observes:

On the 20th June last past my eggs were hatched. I counted out 1,500, and took a few more to supply the place of those that should die in the several stages, say from 50 to 100. These were uncounted. My calculation was to raise about 1,500. By reason of the cold and rainy summer the worms were retarded in their growth, as will always happen—warm and dry weather being the climate suited to the full perfection of the worm, and to facilitate its growth and maturity; yet the food in either case will be about the same—the only difference will be the length of time required for the insect to eat the same quantity of leaves. The first cocoon was wound on the 38th day of the age of the silk worm. After the fourth moulting, or in other words, shedding of their skin—for they shed their skin four times during their life, before they commence winding their balls or cocoons—they are usually about 10 days in winding up their cocoons. Previous to their moulting the fourth time, I counted about 1,450; so that 50 had died out of the 1500, besides the worms I held in reserve as above stated. Of these 1,450 worms, besides those that died during this last age of the worm, and during their winding, I counted 912 that remained on the shelves the 40th day—585 on the 42d day—303 on the 43d day—186 on the 44th day—90 on the 45th day—43 on the 46th day—26 on the 47th day—13 on the 48th day. In ten days from the beginning of winding, all had wound their cocoons except 13 worms. In 4 days more these were all wound. The whole time the silk worms were progressing through their several ages, each age designated by the moulting, including the winding, were 58 days—the usual time is from 42 to 45 days—retarded no doubt from the cold and dampness of the season. There died in the whole, 257 during the several ages, till the completion of the cocoons. I had 1,243 cocoons of all descriptions, and but few, say 15, that would not reel off. The reserved uncounted worms are not included in this estimate.

The weight of cocoons before reeling, and as soon as they were picked from the bushes, weighed 4 lbs. 5 oz., 20 cocoons weighed precisely one ounce.

Raw reeled silk	6½ ounces
Raw silk	1¼ ounce.

Making the whole product of silk nearly one half pound.

The weight of leaves consumed and wasted was 75 lbs.

After I had found the quantity of leaves the 1,500 worms consumed, I made a comparison with a statistical table communicated in a letter to the 20th Congress of the U. S. by Hon. James Mease, on the method of rearing silk in Bavaria, and found by this table, 20,000 silk worms consumed 1,000 lbs. mulberry leaves—exactly corresponding to 75 lbs. for every 1,500 worms—and that from 7 to 10 lbs. of cocoons make a pound of raw or reeled silk—from this estimate the product of my experiment nearly coincides, for 4 lbs. and 5 oz. produced 7¾ ounces of silk. Nor does this estimate of the consumption of leaves and the product of silk materially differ from the estimate and exact result of Count Dondolo—transmitted to Congress by the Hon. Richard Rush, then Secretary of State.

It will readily be perceived that the rearing of silk worms, in our state is practicable and with due management equals the product raised in Bavaria, and the careful management in the extensive laboratory of Count Dondolo, where 8 ounces of eggs, or 160,000 worms are reared. In this laboratory the leaves are chopped, the thermometer regulates the temperature, and the pyrometer the dampness of the atmosphere; and every measure of precaution is used to secure the worms from disease—by ventilation, by stoves, and by cleanliness. On reading these treatises and observing all the nice directions contained therein, any person would almost shrink from the task and become discouraged, before they attempted to enter a field where so many obstacles seemed to threaten him. I have chopped no leaves—made no fire but once or twice, and then when the weather was extremely cold and damp for the season. I gave them what they would eat, and they appeared to know what to do with the leaves as well as any other insect, and not more at a loss about it.

I am fully of opinion that the culture of silk is as easily learned as any other kind of business or art—and that many families in every town would find as profitable a reward for their labor as our rich farmers do, by correspondent care and exertion. ELIAS FROST.

Plainfield, August 27, 1833.

Improved Corn.—This is the season of the year when all those farmers who have not previously attended to the subject should go to their cribs, and select some of the best ears for the purpose of planting, with a view of obtaining in the course of a few years an improved variety of corn. Among the experiments which we have seen recorded, the following seems to ripen early in comparison with others:

Dr. Oliver Fiske of this town has left with us a specimen of corn, of a kind which he has raised for three years past, and which appears worthy the attention of our farmers generally. It has now been fully ripe for near a month, and being thus early, it is not only safe from the frost, but, in consequence of filling out and ripening in the warmer part of the season, is more likely to be sound and heavy than that which ripens later. The kernel and ear are about the size of the common corn, and Dr. Fiske thinks it will yield as large a crop as any corn he ever raised.—[Worcester Spy.]

Corn Cobs for Cattle and Bread.—In a western paper we find the following. If the facts detailed should be sustained by future experiments, we know not why the use of the cob and corn ground together may not become general. We have heard objections made by farmers to the use of the cob, but do not recollect what they are.

Many farmers in this country have within a few years converted the cobs of Indian corn to a use formerly unknown.

The corn and cobs are ground together and given to swine and other domestic animals for the purpose of fattening them. We understand the experiments thus far have proved successful, and that swine and cattle intended for slaughter will grow as fast as on any other fodder. A gentleman in Shrewsbury, Mass. has for seven or eight years used corn and cobs cracked and ground together for provender, and he says it is the best he has ever used for fattening cattle. An experiment was tried a few years ago by feeding one ox with corn and oats ground, the other with corn and cobs—the two oxen being so well matched that no one, on viewing them was satisfied which was best: accordingly they were fed as above. Each ox had an equal quantity at a time, except the one which had corn and oats sometimes became dainty, and would not eat his allowance, while the other kept his regular course. The allowance for both was about three pecks per day. The cattle were taken to market, and weighed about 2800. The one fed on corn and oats had 162 lbs. of tallow. The one that was fed on corn and cobs had 163 lbs. of tallow, and the purchaser of the two oxen pronounced the beef of the latter to be worth half a dollar on the hundred more than that of the other, on account of the color of the beef.

It has also been proved by actual trial, that good and palateable bread may be made from corn and cobs, ground about half and half, sifted as usual, and the addition of the usual quantity of rye meal.

Mills for grinding corn and cobs together have been erected in several small towns in Massachusetts.

Chesnut Orchards.—The price of chesnuts in our markets has led us to think that many farmers might, with profit, devote a portion of their less productive lands to the cultivation of the chesnut. They have commanded, this season, from $6 to $2 50 per bushel. At this rate an orchard would be profitable, independent of the timber. The tree is of quick growth, and produces abundance of shoots or sprouts from the stump.

Exhibition of Stock.—Our friend A. W. has sent us the following, which we suppose is part of the report of the Berkshire Agricultural Society. The spirit that prompts to send stock for exhibition to neighboring fairs is very commendable and patriotic.

Even the citizens of our sister states have done us the honor, by gratuitous exhibitions of stock, to encourage our exertions, and to advance the objects of the society and the interests of the country, The committee beg leave to name Caleb N. Bement, Esq. of Albany, as deserving the thanks of the society for his interesting exhibition of two imported cows and a bull, of the short horn or Durham breed. They are also much indebted to Mr. Thomas Dunn, of Albany, for his exhibition of a buck and lamb of the New Leicester or Bakewell breed. It is presumed that this breed of sheep is entirely new to most of the farmers of the country, and it is well worthy of their consideration, whether their flocks may not be greatly improved by them, particularly as it regards the quantity of the fleece and the size of the sheep. Mr. Bates, of Vermont, exhibited to the society a fine horse, which was much admired for his beauty and excellence. The committee noticed with great pleasure several fine animals from the excellent stock of cattle belonging to the Hon. Henry W. Dwight, to whose patriotic and spirited exertions the agricultural community is largely indebted for a steady and progressive improvement of stock in the county.

Planting for Children.—The strong desire existing in the human breast to provide for our offspring converts that toil, which produces sweat on the brow, into pleasant and cheerful exercise. The farmer rises early and labors until the setting of the sun, in planting, sowing, and reaping—and all this to feed and clothe his family, in the hope, too, of having a little annual surplus for his children when he is gone; but, alas, how many toil in vain!—twenty, thirty, or forty years of care and labor appear to have made no provision for the rising members of the family. Had there been plantations of valuable timber or fruit trees made by the farmer in his young days, their produce would now give a son or daughter a considerable "setting out." Remember this is the season for planting.

NEW-YORK AMERICAN.

NOVEMBER 2, 4, 5, 6, 7, 8—1833.

LITERARY NOTICES.

MEMOIRS OF BARON CUVIER, by *Mrs. R. Lee.* 1 vol. *New York:* J. & J. HARPER.—The biographer of Cuvier is an English woman, the widow of the African traveller Bowdich, through whom, and his scientific and adventurous pursuits, she became known to Cuvier and his family; and when deprived by death of her husband, found in that family, and in its chief especially, consolation and friendship such as is rarely extended to other than near and dear connections. The heart of the grateful woman is consequently manifested in this memoir, which is rather the narrative of the beautiful private life, and the fine moral qualities of Cuvier, than a notice of his literary or his political career, though these of course enter into the general story. We are sure this work is one that will be much read. We extract the account of the last moments of Cuvier, a small part of which indeed has appeared before in our columns, but of which the ensemble requires a repetition.

Although occasionally subject to sight ailments, the health of M. Cuvier, generally speaking, was good, and his carriage was used by him more as a saving of time than a matter of necessity; therefore the sudden summons he received to quit his earthly labors, was an event for which his friends and his country were not prepared. Never were his intellectual faculties more brilliant; never was his great mind more fully possessed of that clearness, that comprehensiveness, which so peculiarly marked it, than at the time of his seizure. His life of temperance and rectitude, at the age of sixty-two, had preserved the corporeal existence unimpaired, and also contributed to the perfection of his mental vigor; for more than forty years he had been unremittingly laboring to perfect his great views in science and legislature; and concerning the former he was about to give to the world the results of his researches and reflections. "His intention was to review all his works, and put them on a footing with the last discoveries, and then to deduce from them, all the consequences, all the general principles, which appeared to him to emanate from such an assemblage of facts, though he did not think it possible, in the present state of human knowledge to establish a general theory. All his studies, all his meditations had convinced him of the philosophical principle, that organized beings exist for an end, for a special object; but he did not admit any scientific theory, and with all his energy maintained that it was not yet possible for any to be formed."[*] But even the entire publication of these facts, of these deductions, was denied to us by the inscrutable ways of the Almighty; perhaps we were not yet worthy of penetrating so deeply into the mysteries of creation as had been given to this one gigantic intellect, and I dare not call the death of M. Cuvier premature, when I think that by so doing I should question the decrees of that Providence to whom we owe the very existence of him whom we deplore, by whom that life was lent to us to increase our sense of his wisdom, and to enlighten us by its example.

M. Cuvier had sought forgetfulness of the storms that were passing without the walls of his peaceful abode, in a greater devotion than ever to his home pursuits; that is, he gave up his evening visits, and the few relaxations he had permitted himself to enjoy. The cholera raged around him, and he saw those fall who were younger and apparently stronger than himself; those whom he loved, and those whose services were essential to the state. Public disturbances filled the streets of Paris, while pestilense stalked through the multitude in every direction. Secluding himself, then, entirely from society, except that of his family; after going through the daily routine of his public duties, he returned to his labors, with an intenseness, which, added to his share of the pervading gloom, was calculated to injure the springs of life. No one, however, could forsee its effects on his constitution; and he himself said, that he had never worked with so much real enjoyment;" and he rapidly advanced, not only in the vast undertakings then begun, but in the preparations for others. On Tuesday, the 8th of May, he opened the third and concluding part of his course of lectures, at the Collège de France, on the history of Science, &c., by summing up all that had been previously said. He forcibly inveighed against that heresy in natural history, which derives every thing in this vast universe from one isolated and systematic thought, and shackles the future of science with the fallacious progess of the moment;[†] he pointed out what remained for him to say respecting the earth and its changes, and announced his intention of unfolding his own manner of viewing the present state of creation; a sublime task, which was to lead us, independent of narrow systems, back to that Supreme Intelligence, which rules, enlightens, vivifies, which gives to every creature the especial conditions of its existence, to that Intelligence, in short, which reveals all, and which all reveals, which contains every thing, and which every thing contains. In the last part of this discourse, there was a calmness, a clearness of perception, an unaffected and unrestrained manifestation of the contemplative and religious observer, which greatly added to its force, and which involuntarily recalled that book which speaks of the creation of the earth and the human race. The similarity was avoided rather than sought; it was not to be found in the words, but the ideas; and at once flashed across the minds of his auditors, when the great professor declared, that each being contains in itself an infinite variety, an admirable arrangement for the purposes for which it is intended; that each being is good, perfect, and capable of life, each according to its order and species, and in its individuality. In the whole of this lecture there was an omnipresence of the Omnipotent and Supreme Cause: the examination of the visible world seemed to touch upon the invisible; the search into the creation, necessarily invoked the presence of the Creator; it seemed as if the veil were to be torn from before us, and science was about to reveal eternal wisdom. Great, then, was the effect produced by the concluding sentences, which seemed to bear a prophetic sense, and which were the last he ever addressed to his audience. "These," said he, "will be the objects of our further investigations, if time, health, and strength, are given to me, to continue and to finish them with you." Those who were versed in human destiny, seemed to feel that his sphere of action was even then placed out of this world, and that he had pronounced his farewell. So near the great and awful tribunal, what other words, what other thoughts than those contained in this lecture, could have so plainly shown the preparation already made for his journey thither?

I am told that the profound emotion occasioned by this last discourse was universal, and that few left the hall without an undefined feeling of sadness, and sentiments of reverence, far beyond the power of expression. On the same day, M. Cuvier, as usual, attended a council of administration in the Jardin des Plantes, and bestowed his last cares on that immense establishment, which owes so large a portion of its treasures to his constant and active solicitude, and to his extreme generosity. "By turns protected and protecting, Mr. Cuvier had there resisted the political vicissitudes which changed all but the sacred asylum of men and things. It wonld seem as if a special grace from Providence has suffered him to remain, during thirty-eight years of revolution, in the same place and with the same occupations. The great mind, the pure intentions, the devoted and disinterested heart, alone are suffered to effect such miracles."

In the evening of Tuesday, M. Cuvier felt some pain and numbness in his right arm, which was supposed to proceed from rheumatism. On Wednesday, the 9th, he presided over the Committee of the Interior with his wonted activity. At dinner that day, he felt some difficulty in swallowing, and the numbness of his arm increased. Never can the look and the inquiry he directed to his nephew, when he found that bread would not pass down his throat, be forgotten; nor the self-possession with which he said, as he sent his plate to Madame Cuvier, "Then I must eat more soup," in order to quiet the alarm visible on the countenances of those present. M. Frédéric, the younger, sought medical advice; and an application of leeches was made during the night, without producing any melioration. The next day (Thursday) both arms were seized and the paralysis of the pharynx was complete. He was then bled, but without any benefit, and from that moment he seemed to be perfectly aware of what was to follow. He, with the most perfect calmness, ordered his will to be made; and in it evinced the tenderest solicitude for those whose cares and affection had embellished his life, and for those who had most aided him in his scientific labors. He could not sign it himself, but four witnesses attested the deed. He sent for the good M. Royer, who was so soon to follow him, to make a statement of the sums he had expended, out of his private fortune, on the alterations of the rooms behind his house, though the affliction of this Chief du Bureau d'Administration was so heavy as almost to disable him from doing his duty. M. Cuvier alone was tranquil; and, perfectly convinced that all human resource was vain, he yet, for the sake of the beloved objects who encircled him, submitted without impatience to every remedy that was suggested.—The malady augmented during the night, and the most celebrated medical practitioners were called in: emetics were administered by means of a tube, but, like all other endeavors, they did not cause the least alteration. Friday was passed in various, but hopeless attempts to mitigate the evil; and, perhaps, they only increased the suffering of the patient.—In the evening the paralysis attacked the legs; the night was restless and painful; the speech became affected, though it was perfectly to be understood. He pointed out the seat of his disorder, observing to those who could comprehend him "Ce sont les nerfs de la volonté qui sont malades;"[‡] alluding to the late beautiful discoveries of Sir Charles Bell and Scarpa, on the double system of spinal nerves:[§] he clearly and precisely indicated the changes of position which the parts of the limbs yet unparalyzed rendered desirable; and he was moved from his own simple and comparatively small bed-room, into that saloon where he had been the life and soul of the learned world; and, though his speech was less fluent, he conversed with his physicians, his family, and the friends who aided them in their agonizing cares. Among other anxious inquirers came M. Pasquier, whom he had seen on the memorable Tuesday; and he said to him, "Behold a very different person to the man of Tuesday—of Saturday. Nevertheless, I had great things still to do. All was ready in my head; after thirty years of labor and research, there remained but to write; and now the hands fail, and carry with them the head." M. Pasquier, almost too much distressed to speak, attempted to express the interest universally felt for him; to which M. Cuvier replied, "I like to think so; I have long labored to render myself worthy of it." In the evening, fever showed itself and continued all night, which produced great restlessness and desire for change of posture; the bronchiæ then became affected, and it was feared that the lungs would soon follow. On Sunday morning the fever disappeared for a short time; consequently he slept; but said, on waking, that his dreams had been incoherent and agitated, and that he felt his head would soon be disordered. At two o'clock in the day, the accelerated respiration proved that only a part of the lungs was in action; and the physicians, willing to try every thing, poposed to cauterize the vertebræ of the neck: the question, Had he a right to die? rendered him obedient to their wishes; but he was spared this bodily torture, and leeches and cupping were all to which they had recourse. During the application of the former, M. Cuvier observed with the greatest simplicity, that it was he who had discovered that leeches possessed red blood, alluding to one of his Memoirs, written in Normandy. "The consummate master spoke of science for the last time, by recalling one of the first steps of the young naturalist." He had predicted that the last cupping would hasten his departure; and when raised from the posture necessary for this operation, he asked for a glass of lemonade, with which to moisten his mouth. After this attempt at refreshment, he gave the rest to his daughter-in-law to drink, saying, that it was very delightful to see those he loved still able to swallow. His respiration became more and more rapid; he raised his head, and then letting it fall, as if in meditation, he resigned his great soul to its Creator without a struggle.

THE NEW ENGLAND MAGAZINE FOR NOVEMBER. *Boston:* J. T. BUCKINGHAM.—This is a very clever number of our cleverest Magazine. It is original, powerful and spirited. The *Equus redivivus* is capital. The notice of Stuart and Hamilton deals too harshly with the former, and too leniently with the latter—especially on the score of intentions. The Nervous Man we are glad to see resumed, and give our readers the pleasure of the following extract from it:—

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[*] Laurillard..

[†] Alluding to the the theory of unity of composition. This and the following citations are taken from a description of this admirable lecture, as noted by a distinguished auditor, the Baron de H——,

[‡] "The nerves of the will are sick."

[§] A month before his illness, he had read a paper before the Institute upon a memoir of Scarpa's, on this distinction between the nerves of will, and those of sensibility.

THE DOCTOR AND HIS PATIENT.

"Ma foi!—ces Medecins sont de vilaines gens!"

So saith Mons. Renard, in his play of the *Legatee;* but so say not I. My physician has just left me. He is a clever fellow, and it may be a skilful, withal. But he has the folly to pretend to cheerfulness, and laughs by main force over his own jokes—the unhappy man! Does he think to deceive people by it? A merry physician, indeed!—as well talk of a laughing death's head—the cacchination of a monk's *memento mori.* Heaven help the doctors! From the court physician down to the veriest quack who ever dosed with herbs or steam *à la Esquimaux*, I commiserate every mother's son of them. This life of ours is sorrowful enough in its best estate—the brightest phasis of our being is "sicklied o'er with the pale cast" of the future and the past. But, it is the lot of the physician to look only upon the shadow; —to turn away from the house of feasting and go down to the house of mourning; to breathe day after day the atmosphere of wretchedness;—to grow familiar with suffering; to look upon humanity disrobed of its pride and glory—robbed of its fictitious ornaments—weak, helpless, naked—and undergoing the last fearful metempsychosis from its end and godlike image —the living temple of an unshrined divinity, to the loathsome clod, and the all inanimate clay. There is wo behind him—there is wo before him. He is hand and glove with misery by prescription,—the ex-officio gauger of the "ills which flesh is heir to." What to him are the much-eulogized charms of home—the holy comforts of one's fires side? *He* has no home, unless it be by the bedside of the sick—the querulous—the dying. Hurrying perpetually from one scene of misery to another, he knows nothing of the quiet happiness of those "sleek-headed men who sleep o' nights." He realizes, more than any other, the truth of that maxim, that

> "Where ignorance is bliss,
> "'Tis folly to be wise."

His ideas of beauty—perhaps even the affections of his heart—are regulated by the irrepressible associations of his profession. Others may talk of their "ladye loves" as angels—sylphs—seraphs—*he* knows better—he knows that woman, as well as man, is "of the earth, earthy." Through the soft and beautiful veil of what *we* call *delicacy*, he sees only the consuming canker of incipient disease. Has his fair one a form of faultless symmetry? He thinks of the *subjects* of his anatomical studies. Does her beautiful smile unveil a set of pearls? He thinks of his dental operations. Does the blush of feeling or modesty mantle, of a sudden, neck, cheek, and brow,—a variable play of coloring, like sunset upon tremulous water? He calls to mind his last case of fever. Does the bright and eloquent blood glow steadily and richly through her fair cheek? He remembers his hectic patients. Tell him of a young lady's sentimental melancholy, and he will forthwith answer you by a dissertation upon dyspepsia. Tell him of broken hearts,—of dying for love—of the "worm i' the bud" feeding upon the damask cheek of beauty,—of the mental impalement upon Cupid's arrow, like that of a Giaour upon the spear of a Janizary; and he will talk to you of liver complaints—of tight lacing—of fashionable exposure—of lack of exercise.

I have sometimes thought that Sheridan's Doctor, in "St. Patrick's Day," was no caricature; indeed, there seems to be something very natural in his description of his dear, deceased helpmate. "Poor Dolly!—I shall never see her like again; such an arm for a bandage—veins that seemed to invite the lancet! Then her skin, smooth and white as a gallipot; her mouth as round and not larger than the mouth of a penny phial; and her teeth—none of your sturdy fixtures—ache as they would, it was but a small pull, and out they came,—I believe I have drawn a half a score of her dear pearls—(*weeps*)—but what avails her beauty? She has gone and left no pledge of our love behind—no little babe to hang like a label upon papa's neck. Death has no consideration—one must die as well as another—fair and ugly, crooked or straight, rich or poor—flesh is grass—flowers fade!"

But, to return to my physician. Never man had a kinder—punctual in attendance—lavish of his drugs —perfectly deferential to the opinions of his patient. As I recount, for the thousandth time, the symptoms of my case, he never fails to congratulate me upon my peculiar good fortune in securing the services of one so able and willing to assist me as himself—significantly assuring me, in the language of Hippocrates's first proposition, that, "Vita brevis; Experimentum periculosum; Judicium difficile." He has, if I mistake not, all the skill and kind wishes of Moliere's Toinet, who disdained to "amuse himself with the small fry of common diseases"—the trifles of rheumatism, vapors, agues, &c. "I would have," said he, "diseases of importance—good continual fevers, good plagues, good confirmed dropsies, good pleurisies,—this is what pleases me—this is what I triumph in;—and I wish, sir, that you had all these diseases—that you was abandoned by all the faculty —despaired of—at the point of death,—that I might demonstrate to you the excellency of remedies."

THE COMMON SCHOOL ARITHMETIC; by CHARLES DAVIES, Professor of Mathematics at West Point, &c. *New York:* N. & S. WHITE.—They who have some experience of the labor and difficulties of instruction, are those to whom we must always look with most hope for amelioration in the forms by which knowledge can be imparted: nor is there any higher or more useful employment of talent, than that which seeks to render plain, precise, and clear, the elements of any branch of learning. It is therefore with satisfaction we find a man, eminent as Professor Davies is known to be as a teacher, occupied in removing the difficulties which lie in the path of young beginners. This little book, prepared for the use of academies and common schools, and for those young men who may be preparing for the Military Academy at West Point, is divided into sections, each subject occupying a section, and each section followed by a series of questions which the learner should be required to answer in his own language, so that it may be perceived whether he has comprehended the idea and reason of the rule, or only learnt its words. Every thing seems to us to be stated with the greatest clearness in these pages.

THE HISTORY OF NUBIA AND ABYSSINIA; BY THE REV. MICHAEL RUSSELL: author of 'Egypt and Palestine,' &c. constituting Vol. LXI of HARPERS' FAMILY LIBRARY.—This is in some sense a supplement to Vol. XXIII of the Library, by the same author, containing a view of 'Ancient and Modern Egypt,' of which Ethiopia—now known as Nubia and Abyssynia—was the civilizer, and imparted to it a knowledge of the arts. After being, as it were, the parent of nations, it was for long centuries shut out from the knowledge of, and all intercourse with, Europe, of which the interest was finally aroused to this ancient people by the report, that, in the midst of Mahometan races, there was in Ethiopia a Christian people, preserving in their purity the rites and doctrines of that Church as originally communicated to them within less than three centuries of its foundation. Travellers soon made these people better known, and we have here the summary up to the latest period of all that has been written concerning them—including notices of the geology, zoology and botany of these regions.

A GUIDE TO AN IRISH GENTLEMAN IN SEARCH OF A RELIGION, by the Rev. MORTIMER O'SULLIVAN. *Philadelphia:* CAREY, LEA & BLANCHARD.—The Rev. Mr. O'Sullivan is master of his arms, and he manages them in this publication with the good temper, ease, and self-possession of one justly confident in his own powers. The Search is certainly a very taking book; but we do not think any one will be the worse off for having such a guide as this to accompany it. Polemics, if ever beneficial, can only be so when conducted in so good a tone and with such perfect decorum as in the volume before us.

THE HEADSMAN, A TALE; by the author of 'The Bravo," &c. 2 vols. Philad. CAREY, LEA & BLANCHARD.—If books are to be judged by their effect upon the reader, we may state a comparative opinion of two of Mr. Cooper's works, in a few words. The Spy we read through, without stirring from the spot where we first took it up: the Headsman, with all the aids of a pelting storm without, we could not master in two days, and after repeated trials. Possibly the fault is in us; possibly also in the writer. But we do not mean ourselves to criticise. * *

NEW MUSIC.—We have this week from JA'S L. Hewitt, & Co. 137 Broadway, the following songs.

Day is gently breaking—words by C. Jeffries—music by S. Nelson.

The mother—words and music by the same.

Apollo's gift—a collection of airs from various composers arranged for the flute, and *trois bagatelles* for the piano.

We conclude with letter No. II, from our Western traveller.

Rodrecksville, Pa. Oct. 19.

The last red hues of sunset were just dying over the western extremity of the road we had long been following, when a herd of cattle, under the guidance of a woolly-headed urchin, collecting indolently around an extensive farm-yard, reminded us alike that it was time to seek shelter, and that one was at hand. A few paces further brought us to the door of a large stone building, displaying with the usual insignia of an inn, an unwonted neatness in all its out-door arrangements: unharnessing our four-footed fellow travellers we proceeded, in spite of the threatening outcry of a huge ban-dog chained at its entrance, to bestow them comfortably in a stable near at hand. A Canadian poney, with a couple of goats, the companionable occupants, seemed hardly to notice the intrusion—and leaving an active mulatto ostler to reconcile any difficulties which might arise between our pampered steeds and a sorry looking jade, which just then entered to claim a share of the comforts at hand, we soon ensconced ourselves before a crackling wood fire in the comfortable apartment where I am now writing.

Every mile of our route to-day has given some new occasion to admire the scale upon which farming is conducted in Pennsylvania. The fences, indeed, are not remarkable for the order in which they are kept; but while the enclosures themselves are tilled with a nicety which preserves the utmost verge of a field from shooting up into weeds or brushwood, the barns into which their harvests are gathered, are so spaciously and solidly built, that they want only architectural design to rival in appearance the most ambitious private mansions. Stone is almost the only material used here in building, and the massive profusion in which not only the barns, but the smallest outhouses upon the premises of these sturdy husbandmen, are piled upon their fertile acres, is such as would astonish and delight the agriculturist accustomed only to the few and frail structures with which the farmers of most other sections of our country content themselves. The establishment of our host is admirably supplied with these lordly appurtenances in which a true tiller of the soil may so justly show his pride. The huge cathedral-looking edifice which towers above his farm-yard, would make as proud a temple as could be well reared to Ceres, even by Triptolemus himself.

The most picturesque country we have yet seen is that immediately around Easton. Indeed, the first view that opened upon us when gaining the brow of a wooded hill, about half a mile from the town, was so fine as to make us forget the regret with which we had a few moments before bade adieu to our prince of landlords and his blooming daughters. The Lehigh, for about a half a mile in extent, lay in the form of a crescent beneath us—a wooded ravine striking down to either horn, and undulating fields—some ruddy with buckwheat stubble, and some green from the newly sprouting wheat, filled up the curves. A grey stone barn stood here and there on an eminence against the bright morning sky, while sheltered below on the alluvial flats formed by the river, a white-walled cottage or two might be seen reposing by its cheerful current. The Lehigh Canal winding through the valley, like a younger sister bent on the same errand, beside the stream from which it takes its name, added not a little when viewed at such a distance to the gathered beauties of the scene.

We took our breakfast at Bethlehem, and availing myself of an hour's necessary delay to give the horses theirs, I left my friend puzzling himself over a German newspaper and strolled off to look at the village. It is a place of considerable interest, not less on account of its ancient and peculiar appearance than the Moravian Institutions which have rendered it so celebrated. I was fortunate enough to meet with Mr. Rilel, the principal of the Female Seminary, who, upon my asking him some trivial question about that excellent establishment, offered in the most polite manner, though I was wholly unknown to him, to show me through the building. It is a plain stone structure of some 80 feet in length, subdivided internally into lecture rooms and dormitories like some of our colleges; one range of small apartments being used entirely as *washing* rooms by the pupils, and having all the necessary furniture for that purpose neatly arranged about each. These, like every other part of the establishment, have their peculiar superintendant, and standing thus distinctly by themselves form an essential feature in the economy of the institution, and with the extensive play-grounds in the rear of the building, evince the attention which is paid to the health and personal habits, as well as the intellectual improvement, of its inmates. I was shown into the school-rooms of the several classes, and had ample opportunity, as the ruddy bright-eyed occupants rose to receive my conductor, to observe the happy effect of the life they led upon their personal appearance. A fresher, fairer assemblage of youthful beauty has rarely greeted my eyes. Several of the apartments were furnished with pianos, and my curious entrance into these smiling domains startled more than one young musician from her morning's practising. I was, as you may suppose, a little, a very little, confused at being thus exposed to the full broadside gaze of a hundred "boarding-school misses." This though, however it might forbid my examining their features in detail, did not prevent me from observing that their general expression was happy and natural—two sources of attraction not so very common in the sex but that they will still strike one even when displayed, as was the case in this instance, in more children.

I subsequently visited the burial ground of the place which I contemplated with no slight interest. The disposal of the dead is as true a test of civilization in a community, as the social relations of the living. The taste which embellishes life passes with the arts attendant upon it, from one nation to another, like a merchantable commodity; but the sentiment that would veil the dreariness of the grave and throw a charm even around the sepulchre, that would hide the forbidding features of that formal mound, and shelter the ashes beneath it from contumely—this is a characteristic springing from some peculiar tone of national feeling and radically distinctive of the community that possesses it. The philosopher, it is true, may sneer at our care of this bodily machine when the principle that gave it motion has ceased to actuate it; but how stolid is he who can look upon the ruin of a noble edifice, even though made irretrievably desolate, with apathy; or who would not fence up from intrusive dilapidation, halls hallowed whether by the recollection of our own personal enjoyments or the memory of the great and good of other times. It is one and the same feeling which arrests our steps beneath a mouldering fortress, and which induces a pilgrimage to the tomb of a departed poet; which kindles our indignation against the plunderer of the Parthenon, that "titled pilferer of what Time and Turks had spared;" and which makes it ready to consume the wretches who tore the bones of Milton from his sepulchre.

The calm sequestered privacy of the Bethlehem burial ground would have satisfied even the particularity of Sir Lucius O'Trigger, whose encouraging suggestion to his non-combative friend Acres, "that there was good lying in the Abbey," shows that he had an eye to his comfort in these matters. It stands aloof from the bustling part of the village, near a noble church which still faces on one of the principal streets. The approach from the church, which has grounds of its own in the form of an ornamented terrace around it, is through a narrow green lane. At the entrance of this, shaded by a clump of willows, stands a small stone building called, I believe, from the purposes to which it is applied, "The Dead House." Here the bodies of the dead are deposited for many hours previous to interment. The head is left uncovered, and life, if by any possibility it be yet remaining, has a chance of renewing its energies before the jaws of the tomb close for ever over its victim. I looked through the grated windows, but saw nothing except an empty bier in the centre, and several shells adapted to coffins of different sizes leaning against the wall. With the usual perversity of human nature, I half regretted that the solemn chamber was at the moment untenanted, and passed on to the place of which it is the threshold.

There my eye was met by the same neat appearances and severe taste which seems to prevail throughout the economy of the Moravians. The graves, arranged in rows with an avenue through the centre dividing the males from the females, are in the form of an oblong square flattened on the top with a small slab reposing in the centre. On this are cut simply the name of the deceased and the dates of his birth and death—a meagre memorial—but enough: and I could not help—after deciphering a number of these moss-covered stones upon which the dews of more than a century had wept—turning with distaste from a few flaring marble slabs at the further end of the yard, upon which the virtues of those beneath were emblazoned in the most approved modern forms.

I left the spot, thinking it a pity that a greater number of trees did not, by shading the grounds, complete their beauty, and felt willing that the young locusts which skirt them round should have time to fling their branches further toward the centre before I should have occasion to claim the hospitality of the place.

Need I say how truly, until then, I am,

Yours. H.

FOREIGN INTELLIGENCE.

Late from France.—By the Sully, from Havre, we have Paris and Havre papers of 1st ult. They furnish little political news. The rumors from Constantinople were numerous, of insurrectionary movements there; but nothing further was known, except that a great fire occurred there on 1st September. Talleyrand had arrived in Paris, and had a long private interview with the King.

The National and the Tribune, prosecuted for their articles, stirring up the Parisians to oppose by force if necessary, the erection of forts around Paris, were acquitted by the Jury.

The *Florida* and the *Isaac Hicks* had arrived at Havre from this port. In the *Estafette*, of Monday, 30th, we find this paragraph respecting a passenger in the Florida, who is not named:

On Saturday a deplorable occurrence took place on board the Florida. A young American coming from New York to finish his medical studies at Paris, was remarked during the passage for his taciturnity and solitary disposition. Whether from regret of home, or private griefs, or merely disgust of life, on nearing the port he asked the captain for some laudanum to check a tooth-ache. A phial containing some was given to him without distrust, and shortly afterwards he was found lifeless, having swallowed nearly the whole of it. He had, it subsequently appeared, attempted ineffectually to destroy himself some days before, by a wound which was discovered in his side.

By the annexed extract it will be seen that the Bohemian meeting of the Sovereigns of Russia and Austria had broken up.

[*From the Estafette of* 1st *October*.]

Letters from Vienna, state that on the 19th of September, the Emperor Nicholas left *Munchen Gratz* for Modlin, where he is to have a great review. He is expected in St. Petersburg about the middle of October. Before leaving Munchen Gratz he distributed many decorations, and became himself the proprietor [*proprietaire*] of a regiment of Austrian Hussars.

The Emperor and Empress of Austria left on the same day for Bruan. The Duke of Nassau passed two days at Munchen Gratz during the residence there of the Monarchs.

All the diplomatic personages who had gone from Vienna to Bohemia, were expected back by the 26th September.

We have looked more carefully over our files of Paris papers by the *Sully*, but do not find any thing of interest. The movements of the ci-devant Duchess of Berri, now Madame *Lucchesi Palli*, are only ridiculous. The *prestige* of her influence was destroyed by the *accouchement* in the chateau de Blaye. The speculations as to the object of the Bohemian conference between the sovereigns of Russia and Austria abound, but very little light is thrown on it, though for good it could not be. Mr. Livingston and his suite, and some of the officers of the Delaware had been presented to, and dined with the King. These civilities however, will not pay the *five millions of dollars* of indemnity from France, though they may soothe the irritation more extensively felt, than acknowledged, induced by the cavalier treatment of this country by Louis Philippe's ministry in postponing till the close of the session of the Chamber, when the members was impatient to be gone, and had moreover been put out of humor in various ways, the consideration of the treaty with the United States and of the appropriations necessary to carry it into effect. We hope much, however, from the efforts of Mr. Livingston, backed as they will be by so just a cause.

A Paris paper of the 28th September has the following:—"The King has received in private audience the officers attached to the United States ship Delaware. These officers are seven in number. The Captain, first, second, third fourth Lieutenants, Captain of Marines, and Chaplain. The King received them with much cordiality and even accompanied them through the visits they made to the different apartments in the Tuilleries.

"The Aid de Camp on service for the day at the palace and who by a lucky chance, happened to be General Bernard, afterwards conducted these gentlemen to the grand gallery of the museum. They are besides, invited to dine with his Majesty to-morrow at St. Cloud."

From London there are accounts by one day later by the packet ship Samson. They present a little later intelligence from Lisbon, but without any interest.

London, Sept. 30, twelve o'clock.—Private Letters have been received this morning, brought by a merchant vessel from Lisbon, dated the 18th instant. Up to that date affairs remained tranquil, no further attack or demonstration having been made by the Miguelite army. It is likewise possitively reported that the steam vessel, the Lord of the Isles, has been captured by two of the Queen's ships. The steamer had on board twenty seven French Officers who were going out to join Marshal Bourmont, and was also heavy laden with amunition and warlike stores. It is likewise stated, that a small schooner laden with shot had shared a similar fate.

The *Hague Journal* states, after a letter from Lubeck, that a Russian 74 gun ship, with a crew of 750 men has been wrecked upon the coast of Finland, and only 15 men saved.

The London Spectator says, "A plot to assassinate the Emperor of Russia has been discovered at St. Petersburgh, in which several Poles are said to be implicated. A report has also been circulated, that letters from General Lafayette were found in possession of one of the conspirators, urging him to the commission of the deed. This the gallant and high-minded old General most indignantly denies; and we suppose there is scarcely a human being who would not at once acquit him of the charge."

Ireland.

The Marchioness Wellesly does not come to this country, and Mrs. Littleton, the daughter of the Noble and Illustrious Chief Governor, is to discharge the functions of Vice Queen at the Irish Court.—[Dublin Evening Mail.]

The Royal William steamboat has arrived, from Quebec, at Cowes, having made her first passage across the Atlantic in 21 days.

Tom Terry, an English convict, is now Thomas Terry, Esq. of New South Wales, and one of the largest wool growers in that country. His income is estimated at £25.000 sterling per annum.

Later from Jamaica.—By the arrival of the packet brig Neptune, we have Kingston dates to the 14th ult. more than a month later than our previous advices. The colonial legislature had been in session nearly a week, and the reply of the Assembly to the Governor's speech, was moderate and conciliatory.—They assure him, that as soon as he shall lay before them the information to which he alludes in his speech, relative to the emancipation bill, it will be considered with that serious attention, which a subject on which the fate of the colony depends, so justly demands. His Excellency rejoined, expressing the unmingled satisfaction with which he had received their reply, and promising to co-operate with them in their labors. There is, however, great excitement, as might be expected, on the subject; and the Jamaica Despatch, an ultra slave paper, holds a high bearing, denouncing the act of Parliament as arbitrary and unjust, and submission to it as evidence of pusillanimity.

Latest from Buenos Ayres.—By the brig Paulina, Captain Ricketson, the British Packet, published in that city, of the 31st August, has been received, from which we make the following extracts:

On the 23d of August, the British brig Prompt, Barnes, from Liverpool, was totally lost near the entrance of the river Plate, at a place called Garzon, about seven miles South of Cape St. Mary. All on board were drowned except the Captain and one sailor.

Buenos Ayres, Aug. 31.—The Director of the Vaccine Establishment in this city, has issued a notice to the public, stating that the small pox is making horrid ravages in Cordove; and that from the number of persons who are continually arriving from that provence, considerable danger exists that the disease may be thus introduced in Buenos Ayres, and attack those who have been vaccinated.

Buenos Ayres, Aug. 31.—The present aspect of political affairs in this province is not very flattering. The time which has elapsed since the suspension of the elections, has not in any degree lessened the excitement in the public mind; on the contrary, we think it has increased: indeed, so much, that during the week, the garrison of this city has "slept on their arms," and the odious sounds of "*quien vive?*" are vociferated by the sentinels, who hail every passenger after a certain hour of the night. We know not the cause of these precautions, nor have we heard of any disturbance, much less of any threatening movement.

Falkland Islands.—It would seem from the following document, which has appeared in the journals of this city; that the matter is not likely to be soon set at rest.

"Bolivian Government.—Foreign Depar't.

Government Palace in Chuquizaca, 19th June, 1833.

"Sir—The undersigned Minister of Foreign Affairs of the Bolivian Republic, has laid before his government the esteemed communication of the Minister of Foreign Affairs of Buenos Ayres, relative to the occurrence on the 2d of January last, on the Island of la Soledad, one of the Falkland Islands. This disagreeable event has renewed in the Government of Bolivia, the sentiments of regret which it had before experienced, on observing that mistaken interests have frustrated the grand project of the Congress of Panama. It would indeed have given to the sections of America, all the respectability necessary to prevent European nations from committing aggressions proscribed by international law, and to repel them with vigor in case they should preceed to violent measures. The occupation of the Falkland Islands, without previous reclamation, without any just title, without any other support than the abuse of power, has been sensibly felt by the Government of Bolivar, which, respecting even to the extreme, the rights of every nation, would wish that all of them should discard, *de facto*, measures so contrary to reason, and to the enlightenment of the age. As a manifest violation of the law of nations, the outrage committed on the Argentine Republic is not only to be considered, but likewise the disregard of the other American sections which it involves. In more plain terms, the conduct of the British Cabinet with respect to the Falkland Islands, is not only prejudicial to the Government which has been despoiled of their possessions, but offensive and extremely injurious to all the American Republics; and it is, in the opinion of the Government of Bolivar, an affair highly continental. Under this view, it will with pleasure not only enter into and aid in whatever may lead to the reparation of so grievous an offence—but likewise sincerely desires that it may be accounted among the first to reclaim and obtain, by those measures which may be deemed most convenient, indemnity for the injuries sustained, and the redress which so much interests American sovereignty and dignity.

"Such, Sir Minister, are the sentiments of the Government of the undersigned, and of the Bolivian Nation identified with those of every true American heart.—The Government of Buenos Ayres may always reckon upon them, when it has to sustain, and to cause to be respected the political rights of the sister Republics, which are essentially annexed to their Sovereignty and independence.

Mariano Enrique Calvo.

To H. E. the Minister of Foreign Affairs of the Government of Buenos Ayres."

Montevideo.—A communication, dated Head Quarters, *El Yi*, 15th inst, from the President of the Oriental Republic of the Urugary, (Fructuoso, Rivera,) to the Minister of War at Montevideo, states that the tranquility of the Republic being completely established, he had given orders to disband his army, except a small portion of it for the service of the frontiers.

Buenos Ayres Prices.—Ox hides, best, $31a32 per pesada; do. country, 29a30 do.; do. weighing 23 to 24lbs. $26a28, do. salted, $24a26 do.; do. horse, $10a14 ea.; Nutra skins, $65a70 per dozen; Chinchilla, $33a39 do.; Wool, (common) $9a11 do. per arroba: Hair, (long) $30a32 do.; Hair, (mixed) $350a900 per thousand; Flour, (N. A.) $80a82 per barrel; Salt, on (board) $16a18 per fanega.

[*From the Commercial Advertiser.*]

From Carthagena.—By the arrival of the British packet Lyra, at Kingston, Jam., from Carthagena, which place she left on the 8th of October, information is received that Rear Admiral Duportel, Governor of Martinique, had repaired to Carthagena with several French vessels of war, and demanded reparation for the insult offered some time ago to M. Barrot, the Representative of the French court at that place.—The demand was accompanied by a threat of using force in case of refusal. The Governor, Colonel Veaga, stated in reply, that as he was without an armed force, the commander of the French ships could, if he pleased, carry his resolution into effect; but that if he did make war upon a defenceless people, he would be held responsible for the result. The Governor assured the Admiral that he had not the authority to make the reparation demanded—but that it must rest with the supreme authorities. Further correspondence between the parties ensued, which ended in a declaration by the French Admiral, that he would blockade the port, if, at sunset on the 17th, full satisfaction was not awarded.

The Serpent, a British vessel of war, had been despatched from Kingston, to protect the persons and property of British subjects at Carthagena.

The Kingston Chronicle of the 8th, has the following remarks:—

The whole property of the island is at stake; and one false throw of the Legislature may annihilate it forever. The chances are now in our favor, if we play our game fairly; but if we allow our attention to be drawn aside, or distracted by the excitation of radicals, we shall infallibly lose the self-possession necessary to ensure the success attendant upon calm and cautious dexterity. All must be impressed with the necessity of acting with the most prompt and temperate decision to avert the dreadful consequences of external legislation; and if the present moment be not properly employed to secure our future welfare, the opportunity may be lost forever. An honest, firm and straightforward policy is what we would recommend, and the adoption of a measure likely to reflect credit on the loyalty and generosity of the Jamaica Legislature, as well as to render nugatory the Parliamentary Bill viz: the passing a bill agreeing in principle with that passed by the Imperial Legislature, but regulating the details to suit the character of our Colonial population, and at the same time obviating the expensive machinery of Commissioners. In short, agreeing to shorten or abolish the term of apprenticeship, provided full, fair and unencumbered compensation be immediately secured.

SUMMARY.

[*From the National Gazette.*]

The letter of E. Champion Jr., to the Editor of the Hartford Times, which appeared in the National Gazette of the 24th inst., being calculated to do injury, by drawing off the attention of the public and engineers from what is generally admitted by practical men to be the cause of the explosion of steam boilers, I have deemed it a duty to endeavor to bring them back to the true source of the evil, namely, the want of water in the boilers.

It is not to be wondered at, that after so terrible a concussion a part of a bulk head should have been found resting on the lever of the safety valve; and even if it had been there before, he has not shown that there was then steam enough to burst a good boiler, which undoubtedly those of the New England must have been, being more than a quarter of an inch thick, and nearly new. It appears, too, that there were two mercurial gauges, yet we do not learn that the quicksilver was blown out, which would have been the case before the steam would have burst the boilers. The rapid formation of steam at Essex proves a scarcity of water; and their simultaneous explosion goes far to prove an instantaneously created, irresistible power; but the circumstance of the accident occurring immediately on the starting of the engine, is conclusive to my mind that the jet of water into highly heated boilers, was the only cause of the lamentable catastrophe.

I have seen a small square boiler, so strongly secured by wrought iron stays that I supposed it capable of bearing a pressure of 500 pound to the square inch, so strained in consequence of an ignorant bystander turning the feed cock for one instant when the boiler was highly heated and quite dry, as to break one or more of the stays, and bend up the top like the lid of a trunk, notwithstanding the safety valve and two additional holes made by the melting of their pipes. Had there been a little more water, it is probable an explosion would have ensued.

When such accidents happen with condensing engines, it seems impossible in any other way to solve the mystery; for they are not capable of working with more than 20 lbs. to the square inch, as they cannot condense more than that, even when they shut off the steam at half the stroke of the piston. Now, little danger can be apprehended from a pressure of 20lbs. in a good boiler, seeing that 100 to 150 is very common with high pressure engines; and the iron of both is nearly the same, although not always the construction.

How, then, can the recurrence of these dreadful explosions be prevented? Not by placing a safety valve under the lock and key of a government officer: this would not remedy the evil, for it would not ensure a supply of water to the boilers. It can only be done by applying more checks and more attention on the part of the captain and engineer. This most important part of the operation of working an engine,—feeding the boilers,—is too frequently entrusted to a very common personage, the fireman—a person not likely to be very highly impressed with the great responsibility of his station. The gauge cocks are in his room, and too rarely opened by any body else. May not such a one open the cocks mechanically, and not be able one minute afterwards to say whether steam or water was given out? May he not, especially at night, become drowsy and negligent? Let then "sleeping Duty be roused at her post."

The force pump is as complicated as any part of the steam engine, very liable to get out of order, and may not do its office when it is supposed to be doing it. Let then each engine be provided with two force pumps, which shall be used day about to insure their good condition; let gauge cocks, in addition to those of the firemen, be placed within the reach of the engineer; and discourage the racing of steamboats, because, as the feeding of the boilers destroys steam, if either has a difficulty in keeping up a supply, there would be a temptation to withhold the water until it might be dangerous to renew it. It is possible that, owing to an obstruction or defect in the pipe leading to the force pumps, the feeding may not go on. Let the difficulty arise from what it may, there should be no hesitation, after the water gets below the ken o the engineer, which is the case as soon as it is below the lowest gauge cock, to cause the fire under the boilers to be put out, until the remedy is applied, and the boilers replenished by the *hand pump*. Much better would it be to detain the passengers one hour than to injure an individual,—better to detain them a month than to explode a boiler in the midst of them.

L.

Volcanic ashes, when carried into the highest regions of the atmosphere, are usually wafted to the eastward. Upon an eruption of Mount Vesuvius in 1631, a shower of ashes fell upon the coast of continental Greece, and also at one hundred leagues distance towards the coast of Syria. On the eruption at St. Vincent in 1812, ashes were deposited at Barbadoes, sixty or seventy miles eastward, and also on the decks of vessels one hundred miles still farther east, while the trade wind at the surface was blowing in its usual direction. In the same year ashes fell upon the deck of a British packet bound to Brazil, when distant nearly one thousand miles from the nearest land.—[Silliman's Journal.]

Letters have been received, by the owners of this port, of the following ships at Fayal.

Aug. 26th Gov. Clinton—no oil, all well.

Sept. 7. Arabella, no oil, had landed 3 colored men who were sick.

6th. Daniel Webster, no oil, all well.

17th. Franklin, 160 bbls sperm oil, all well.—[Sag Harbor Corrector.]

Interments at New Orleans.—*Catholic.*—Oct. 12, 24; 13, 10; 14, 14; 15, 13; 16, 15; 17, 14; 18, 13; 19, 13; 20, 11; 21, 7.

Protestant.—Oct. 12, 6; 13, 2; 14, 7; 15, 13; 16, 13; 17, 5; 18, 7; 19, 5; 20, 7; 21, 7.

The loss by the fire at Lee, Mass. on Saturday evening, which destroyed one of the paper mills of W. W. & C. Laflin, was about $12,000. Insurance $8000. Only one of the mills was burnt; the other is uninjured. From that which was destroyed, a part of the contents was saved.

We may safely congratulate our readers on the favorable termination to the nation, of our struggles for sovereignty with the State of Alabama, in consequence of that State having extended its jurisdiction over that part of the Cherokee territory lying within its limits. It is we believe, generally known that the Cherokee Government within these limits had been superseded by that of Alabama, and the vacant lands settled upon by the whites. At a Circuit Court of September term, for the county of St. Clair, his honor Judge Adair, presiding, came up for trial, *a Cherokee Indian*, indicted for the murder of an Indian in the Cherokee territory, in Alabama. The Counsel for the Nation filed a plea to the jurisdiction of Alabama, as repugnant to the treaties, &c., of the United States. Judge Adair remarked, that he was sworn to support the Constitution and Treaties of the United States, and would be strictly governed by them. In an elaborate opinion, as we are informed, Judge Adair has declared the laws of Alabama over the Cherokees, null and void, and repugnant to the treaties and laws of the United States. We shall publish the opinion so soon as we can obtain a copy.—[Cherokee Phenix.]

Mr. *J. Fennimore Cooper* and his family have arrived in the Samson. He will be warmly welcomed to his native home.

We are requested to state, that the hour of starting for Philadelphia has been changed from 6 to 8 o'clock, and the steamboat Independence, of the Railroad Line, will leave tomorrow (Wednesday) morning at the above hour, the 10 o'clock line having been discontinued for the season.

[*From the Baltimore American.*]

The Legislature of Tennessee, and the Union Bank of Tennessee, have got into a controversy which threatens to be an angry and protracted one. The circumstances are curious. As far as we can make them out from publications in the Nashville papers, particularly the report of the Committee on Banks, they are these.

The charter of the Union Bank was granted in 1832. For the charter the Bank agreed to pay, by the terms of the act, a certain bonus, and a certain interest on the deposites of public money. The State subscribed for $500,000 of the stock, for which bonds were issued to that amount, and the *seventh* section of the charter of incorporation appropriated the proceeds of these several sums in the following way:

"Be it enacted, That the profits which may arise from the stock owned by the State in the Union Bank of the State of Tennessee, after the bonds of the State shall have been paid, and also the *bonus* agreed to be paid by the Bank of the State for the privileges conferred by this charter, and also the interest which may from time to time accrue, upon the deposites of public money, by the treasurers of the State, shall be and they are hereby appropriated to the use of Common Schools in this State."

On this clause, the President and Directors of the Bank have set up a most extraordinary claim, They refuse to pay the bonus, the interest upon deposite or the dividends on the stock into the State Treasury, and insist that this clause makes them trustees for a sinking fund to pay the State debt contracted by those bonds, to the exclusion of the State itself! The State bonds are not payable finally for *thirty* years, and the Bank demands to have the use of all the public money, the dividends on all the public Stock, and the debt which it owes the State, to accumulate, as they allege, to provide for the security of the holders of State scrip, in case the 'Legislature might fail to raise the necessary funds." They, therefore, tell the Legislature that they feel it their *duty* to "resist" the withdrawal of these funds from the Bank.

As might be expected, the Legislature is rather restive under these imputations upon the honor and credit of the State, and efforts to supersede the functions of the Treasury by a corporation. The report of the Committee uses freely such phrases as 'officious interference,' 'arrogant dictation,' 'rapacity,' 'fraud,' &c. and recommends a bill,—we have not seen it,—to bring the matter before the judicial tribunals.

The *Indian Question* is before the Legislature of Tennessee. The Cherokee lands in that State form a very considerable tract of country, over which the laws of the State have not yet been extended. At the present session, a bill has been reported for giving the State Courts "cognizance of crimes and misdemeanors committed, and of all contracts made in the said territory."

The bill expressly reserves to the Indians the unmolested enjoyment of their property, real and personal, their customs and usages, and exempts them from taxation by the State, except where admitted according to law to all the privileges of citizens.

It met with considerable opposition upon the ground that the Cherokees were, in accordance with existing treaties under the constitution, a *quasi* independent nation, and could not rightfully be subjected to the jurisdiction of the State. After a long discussion, it was finally passed by a vote of 24 to 15, and sent to the Senate, which body has not yet acted upon it.—[Baltimore American.]

The Montreal Daily Advertiser, of the 29th ult. says—"A shock of an earthquake was felt at Metis, on Saturday, the 12th inst."

NAVAL.—Com. Wadsworth, appointed to the command of the United States squadron in the Pacific, has hoisted his broad pendant on board the United States ship Vincennes, lying in this harbor. We understand the V. will sail in a few days.—[Norfolk Beacon]

MOBILE, Oct. 21.—The new mail boat Watchman, Capt. Gedney, arrived at this port yesterday. She is a fine specimen of naval architecture, and from what we have seen and heard, we make no doubt she is well calculated for the route for which she is destined. The time occupied in running from Cape Henry to Mobile Point, was only 9 days and seven hours, during which time, in consequence of head winds, she used her sails but eight hours. She will remain here about a week, to complete the repairs rendered necessary by the accident with the brig Nahant, when she will take her place on the line. Capt. Gedney pronounces her a first rate sea-boat.

MR. CLAY.—We learn that Mr Clay was to leave Boston on his return South yesterday—crossing over the country via Worcester, Northampton, Pittsfield, &c. to Troy and Albany—and thence descending the river to this city. The citizens of Troy and Albany, without distinction of party, have extended an invitation to the Western Statesman, and we are glad that he has accepted it.—[Com.]

[*From the Newbern N. C., Spectator.*]

We observe with great satisfaction the present prosperous and improving state of our town. Every commodity brought to market finds a ready and fair sale. The citizens of the adjacent country are satisfied with the prices, and believe that their labour is adequately remunerated. There is not a house in town which is not either occupied or engaged, and new buildings are gradually appearing in every direction. The number of merchants, also, has increased very considerably. We hope that these signs of prosperity may be as substantial as they are cheering, and that they may be followed by an increased diffusion of information, (i. e. the Sentinel) and a generous encouragement of literature.

The President has officially recognized *Adel Charles Lacathon de la Forest*, as Consul General of France for the United States.

The United States sloop of war Warren, Master Commandant Cooper, arrived at Philadelphia on Wednesday, and anchored off the Navy Yard. A national salute was fired by the Warren, and returned from the Navy Yard. Officers and crew all well.

[*From the National Intelligencer of Wednesday.*]

We understand that among the official visiters now in this city, are the members of the Army Medical Board of Examination. The Board, after a tour of inspection along the Northwestern, Western, and Southwestern stations, of nine thonsand miles travel, and after sitting as a Board of Examination at New-Orleans, St. Louis, and at New York, have been ordered to the seat of government, to confer with the Secretary of War and the Surgeon General, on the important duties which have occupied them for the last eight months. The Board consists of Surgeons Lawson and Mower, and Assistant Surgeon Smith. While the operations of this Board have had an influence on the Medical department of the Army, primarily conducive to the safety, health and comfort of the brave soldier and the gallant officer, it is but an act of justice to their humanity and professional skill, to state, that in long course of their journey they travelled with the pestilence in the West, and most assiduously devoted their able services to the relief of their fellow citizens.

We consider the establishment of the Army Board of Medical Examination as highly creditable to the judgment and energy of Secretary Cass, as its perpetuation is certainly to conduce to the health and safety of the army, and to elevate the character of our Military Medical Department.

ANATOMY OF THE HORSE'S FOOT.—The horse, a native of extensive plains and steppes, is perfect in his structure, as adapted to these, his natural pasture grounds. When brought, however, into subjection, and running on our hard roads, his feet suffer from concussion. The value of the horse, so often impaired by lameness of the foot, has made that part an object of great interest; and I have it from an excellent professor of veterinary surgery to say, that he has never demonstrated the anatomy of the horse's foot without finding something new to admire. The weight and power of the animal require that he should have a foot in which strength and elasticity are combined. The elasticity is essentially necessary to prevent percussion in striking the ground; and it is attained here, through the united effect of the oblique position of the bones of the leg and foot—the yielding nature of the suspending ligament, and the expansibility of the crust or hoof. So much depends on the position of the pastern bones and coffin bone, that, judging by the length of these and their obliquity, it is impossible to say whether a horse goes easily, without mounting it. When the hoof is raised, it is smaller in its diameter, and the sole is concave; but when it bears on the ground it expands, the sole descends so as to become flatter; and this expansion of the hoof laterally is necessary to the play of the whole structure of the foot. Hence it happens that if the shoe be nailed in such a manner as to prevent the hoof expanding, the whole interior contrivance for mobility and elasticacy is lost. The foot in trotting, comes down solid, it consequently suffers precussion; and from the injury, it becomes inflamed and hot. From this inflammation is generated a variety of diseases, which at length destroy all the beautiful provision of the horse's foot for free and elastic motion. The subject is of such general interest, that I may venture on a little more detail. The elastic or suspending ligament spoken of above' passes down from the back of the cannon bone, along all the bones to the lowest, the coffinbone; it yields and allows, these bones to bend. Behind the ligament the great tendons run, and the most prolonged of these, that of the perforans muscle, is principally inserted into the coffin bone, having at the same time other attachments. Under the bones and tendon, at the sole of the foot, there is a soft elastic cushion; this cushion rests on the proper horny frog, that prominence of a triangular shape which is seen in the hollow of the sole. The soft elastic matter being pressed down, shifts a little backwards, so that it expands the heels, at the same time that it bares on the frog, and presses out the latteral part of the crust. We preceive that there is a necessity for the bottom of the hoof being hollow or concave—first to prevent the delicate apparatus of the foot from being bruised, and, secondly, that elasticacy may be obtained by its descent. We see that the expansion of the hoof and the descent of the sole are necessary to the play of the internal apparatus of the foot. That there is a relation between the internal structure and the covering, whether it be the nail, or crust, or hoof, we can hardly doubt: and an unexpected proof of this offers itself in the horse. There are some very rare instances of a horse having digital extremities. According to Suetonius, there was such an animal in the stables of Cæsar; another was in the possession of Leo X.; and Geoffrey St. Hilaire, in addition to those, says, that he has seen a horse with three toes on the fore-foot, and four on the hind-foot.* These instances of deviation in the natural structure of the bones were accompanied with a corresponding change in the coverings—the toes had nails, not hoofs. By these examples, it is made to appear still more distinctly, that there is a relation between the internal configuration of the toes and their coverings—that when there are five toes complete in their bones, they are provided with perfect nails—when two toes represent the whole, as in the cleft foot of the ruminant, there are appropriate horny coverings—and that when the bones are joined to form the pastern bones and coffin bone, there is a hoof or crust, as in the horse, couagga, zebra, and ass.—[Bell's Bridgewater Treatise.]

MAXIMS AND REFLECTIONS FROM GOETHE.

Modern poets pour a great deal of water in their ink.

The greatest difficulties are found where they are least expected.

In the works of man, as in those of nature, their purpose and design are the proper objects of our attention.

The greatest good that we derive from history is that it awakes enthusiasm.

Literature is a fragment of a fragment. Of all that ever happened, or has been said, but a fraction has been written; and of this latter but little is extant.

Shakspeare is dangerous reading to budding talent,—he compels it to reproduce him while it fancies it is producing itself.

Wisdom exists only in truth.

The smallest hair casts its shadow.

There are not always frogs where there is water, but where we hear them croak we may be sure the latter is not far off.

Many knock at random on the wall with the hammer, and fancy they hit the nail on the head every time.

Historical writing is a way of getting rid of the past.

What we do not understand we do not possess.

Foresight is simple, retrospection manifold.

One who feels not love must learn to flatter, or he will never succeed.

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* Such a horse was, not long since, exhibited in town, and at Newmarket.

The world is a cracked bell; it rattles, but does not ring.

There are men who never go wrong, because they never entertain any sensible project.

Time is itself an element.

Let us know the world as we may, it has always a day and night side.

At all times it is individuals and not the age which have influenced knowledge. It was his age which poisoned Socrates, his age which condemned Huss to the stake. Ages have always been alike.

What government is the best?—that which teaches us to govern ourselves.

Truth is like God: it does not show itself directly; we must seek it in its manifestations.

It would not be worth while to live to seventy, if all the wisdom of the world is foolishness before God.

APHORISMS ON NATURAL SCIENCE.

The ignorant propose questions which the learned have answered a thousand years ago.

Nothing is more prejudical to a new truth than an old error.

Man must persist in the belief that the incomprehensible is comprehensible, otherwise he would inquire into nothing.

Hypotheses are lullabies with which teachers hush their pupils asleep.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber. D. K. MINOR, 35 Wall street.

New-York, August 14, 1833.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
S1 R J M M & F

RAILWAY IRON.

☞ Ninety-five tons of	1 inch by	½ inch,		*Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
200	do.	1¼ do.	½ do.	
40	do.	1½ do.	⅜ do.	
800	do.	2 do.	½ do.	
800	do.	2½ do.	½ do.	
	soon expected.			

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. o73meowr

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NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. S1 R J M M & F
o1

G. LANSING, *Engraver on Wood,*
35 WALL STREET.

☞ All kinds of Machinery correctly drawn, and neatly engraved. M4

☞ THE ADDRESS OF J. P. KENNEDY, Esq. of Baltimore, delivered before the Members of the American Institute in this city, together with a full account of the FAIR, held at Masonic Hall, for 1833, and for which a copy-right has been secured, will be published in pamphlet form, at the office of the MECHANICS' MAGAZINE. It will be ready for delivery on the 12th inst. when it may be had by the single number, dozen, or hundred. n1

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

⁂ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.
J25 tf

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

INSTRUMENTS

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 15th to the 25th day of October 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Octob. 15..	6 a. m.	52	30.17	WSW	faint	w by s	cloudy
	10	56	30.19	variable	..—light	..	.. —fair
	2 p. m.	62	30.10	SSE	light	w / w by s	fair—cloudy
	6	61	30.03	..	..	w by s	cloudy
	10	61	30.04	..	..		..
" 16..	6 a. m.	64	29.96	S—SW	moderate	sw by w	..
	10	67	29.98	SSW	..	sw	..
	2 p. m.	70	29.91	S	..	..	..
	6	68	29.89	..	light	..	..
	10	66	29.90	..	..	..	fair —storm
" 17..	6 a. m.	64	29.82	..	..	..	cloudy
	10	65	29.80	SSE	..	..	..
	2 p. m.	69	29.77	ESE	—fresh	..	rainy —fair
	6 a. m.	67	29.70	SSE	moderate	ssw / sse	fair—light scuds from SSE
	10	67	29.60	..	strong	..	..
" 18..	6 a. m.	53	29.85		..		..
	10	52	29.90	WSW	..	ssw	..
	2 p. m.	57	29.95	SSW	moderate	..	cloudy —fair
	6	53	30.07	WSW	..	..	fair
	10	50	30.18				..
" 19..	6 a. m.	45	30.33	W—NW	..	WSW	..
	10	50	30.40	NNW	..	..	..
	2 p. m.	53	30.38	..—SE	faint	..	..
	6	50	30.38	..	..	..	..
	10	50	30.41		..	..	cloudy
" 20..	6 a. m.	43	30.33	NE	moderate	ENE rain scuds	rain
	10	42	30.35	..	fresh	NE ..	..
	2 p. m.	44	30.32	..	..	.. ..	..
	6	43	30.26	..	..	.. ..	..
	10	42	30.26	..	..	.. ..	..
" 21..	6 a. m.	44	30.12	..—ENE	mod.-fresh	.. ..	..
	10	45	30.10	NE	—..	.. ..	..
	2 p. m.	46	30.05	..	moderate	.. ..	..
	6	47	30.03	..	fresh	.. ..	..
	10	47	30.00	..	..		
" 22..	6 a. m.	48	29.83	NNW	moderate	NNW—NW	rainy
	10	48	29.89	NW—NNW	..	WNW	..
	2 p. m.	52	29.87	W—W by N	..	S / WNW	cloudy
	6	49	29.89	W by N	..	..—WNW / W	fair
	10	47	29.94	WSW	..	SW	..
" 23..	6 a. m.	40	30.01	SW—N by W	..—fresh	..	..
	10	47	30.08	SW by W	fresh	..	..
	2 p. m.	51	30.06	..	..	..	..
	6	52	30.04	..	..	..	.. —hazy at SW and W
	10	48	30.04	..	..	..	..
" 24..	6 a. m	48	29.94	SSW	moderate	..	.. —hazy at E
	10	53	29.92	..	..	..	..
	2 p. m.	59	29.80	..	..	..	..
	6	56	29.70	..	..	..	..
	10	54	29.70	..	..	sw by w	..
" 25..	6 a. m.	53	29.67	SW	..	..	cloudy —fair
	10	55	29.65	WSW	..	..—WNW	fair
	2 p. m.	58	29.62	..	..	W	..
	6	55	29.67	..	..	WSW	..
	10	52	29.70	..	..	..	..

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of September, 1833—(*Lat.* 31.10 *N.*, *Long.* 91.59 *W. nearly.*)

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Thermometer.*			*Wind.*	*Weather, Remarks, &c.*
1833.	Morn'g.	Noon.	Night.		
Sept'r 1	72	88	82	NE—light	cloudy—Red River falling
" 2	71	88	81	..	clear
" 3	70	87	82	calm	..
" 4	71	87	78	E	light showers & sunshine—evening calm & cloudy—Red River fell 5 inches
" 5	74	86	77	NE-strong	cloudy—at 3 a. m commenced raining and continued very heavy to 1 p. m.*
" 6	74	86	83	SE—light	clear—flying clouds—evening calm—Red River rising
" 7	78	87	80	calm	.. evening—light showers
" 8	74	86	82	..	..
" 9	72	88	82	..	.. —Red River risen 22 inches, now falling
" 10	77	88	82	..	cloudy morning—from 10 a. m. wind NE and clear—night cloudy
" 11	75	86	83	..	clear
" 12	73	87	85	..	..
" 13	72	86	80	..	.. —light shower at 1 p. m.
" 14	75	86	79	SW	.. morning—light showers—calm—cloudy evening
" 15	74	85	83	W	.. —flying clouds—evening calm and sultry
" 16	76	86	83	calm	.. —light breezes from S
" 17	77	83	80	..	..
" 18	75	86	82	SE	..
" 19	72	85	78	calm	.. —Red River fell since the 9th, 22 inches
" 20	71	88	82	..	..
" 21	71	74	73	NE	cloudy—night calm and clear
" 22	60	73	68	N	clear
" 23	58	75	70	calm	..
" 24	62	76	73	N	.. —calm evening
" 25	62	79	77	NW	.. — .. ..
" 26	65	81	78	calm	..
" 27	65	84	79	..	..
" 28	74	87	80	SW—light	cloudy—clear evening
" 29	70	87	80	calm	clear
" 30	72	87	77	S—light	at 4 p. m. thunder shower—heavy showers all night.

* Sept. 5th—severe flaws of wind all day; evening and night heavy showers; at night wind severe form E to SE.

September—Red River fell since the 1st of this month, 1 foot 4 inches; fell previously, 22 feet 10 inches; and is now below high water mark, 24 feet 2 inches.

[*From the Albany Argus.*]

We have been requested by the Comptroller to publish the following notice:—

Merchandize transported upon the Canal.—Merchants would facilitate the transportation of merchandize upon the canal, if they would weigh each box, cask, package or separate parcel of goods, and mark the weight upon it. The statute requires that "every master of a canal boat, conveying property on a canal, shall exhibit to the several collectors, a just and true account, or bill of lading," containing among other things, "*a statement of the weight of all the articles on which toll is charged by the ton.*"

This weight should be ascertained and marked upon the box or cask, by the merchant who sells the goods. The attention of merchants in the city of New-York is specially directed to this subject of weighing and marking merchandize which is to be transported upon the canals.

Canal boats are now frequently loaded in the city of New York with 30 or 40 tons of merchandise, and when the boat arrives at Albany and a clearance is wanted, the master has not the means of giving such a bill of lading as the law requires, without unlading his boat and weighing each article.

The merchants who sell the goods may remedy this evil by weighing and marking upon each article the weight thereof, and by giving the purchaser or shipper, with his bill of goods, the weight also of each article.

Every person who loads a canal boat, in New York or elsewhere, should bear in mind, that to enable him to get a clearance to navigate the canal, he must be enabled to give, not only a bill of all the articles on board, but also the weight of each article.

Nov. 1, 1833.

MARRIAGES.

Thursday evening, Oct. 31st, by the Rev. Dr. Lyell, EDWARD B. VALENTINE, to Miss ELIZA EMILY, daughter of Elijah Pinckney, Esq. all of this city.

On Wednesday morning, 6th inst., at St. Thomas's Church, by the Rev. Dr. Hawks, J. H. BORROWE, M. D., to JANE, daughter of John Beekman, Esq., all of this city.

On the 17th instant, by F. T. Tiffany, Mr JAMES SWARTWOUT, of Milford, to Miss MARGARET WILCOX, of Middlefield, Otsego co., N. Y.

On the 15th instant, by Rev. Daniel Nash, Mr AURELIUS TUNNICLIFF, of Warren, Her. co., to Miss NANCY ANN TUNNICLIFF, of Columbia.

On the 20th instant, by Elder H. Robertson, Mr. HARVEY W. KENDAL, to Miss PHOEBE IRONS, all of Hartwick.

In Laurens, on the 20th inst., by S. J. Cook, Esq. Mr. GEORGE MATTESON to Miss PHILINDA ELDRED.

At Pendleton, S. C., on the 22d inst., by the Rev. Mr. Barnwell, WILLIAM VAN WYCK, of this city, to LYDIA ANN, youngest daughter of Samuel Maverick, Esq. of the former place.

In Philadelphia, on the 5th instant, by the Right Rev. Bishop White, GEORGE TROTT, Jr., of this city, to SARAH, eldest daughter of Thomas McKean, Esq., and grand daughter of the late Governor McKean, of Pennsylvania.

At Coxsackie, on Monday evening last, by the Rev. Mr. Grigg, of Athens, COLUMBUS LANE, of New York, to ELIZABETH, daughter of Barent Houghtaling, Esq., of Coxsackie.

At Port Deposit, on Tuesday Morning, 22d inst. by the Rev. W. Finney, Lieut. JOHN ARCHER, of the U. S. Army, to Miss ANN D. daughter of T. L. Savin, Esq. of Port Deposit.

DEATHS.

On Sunday morning, after a short illness, DANIEL BOARDMAN, Esq., in the 77th year of his age.

Yesterday afternoon, in the 31st year of his age, Mr. JAMES F. JACKSON.

This morning, Oct. 31st, WILLIAM DEWITT, infant son of Dr. C. A. Lee, aged 11 months.

Thursday evening, Oct. 31st, Mrs. MARY BREWSTER, in the 63d year of her age.

On the 28th instant, LYDIA ANN ANTHONY, wife of Captain Caleb Anthony, Jr.

On Saturday evening, of a lingering disease, Mrs. A. WILSON, consort of James Wilson, and daughter of the late R. Bannan, deceased.

On Saturday evening, WM. W. ELLIS, aged 7 years.

At Schooley's Mountain, N. J., on Thursday afternoon last, LEONORA, twin daughter of C. Bowne.

On 18th Oct., at Pleasant Valley, Dutchess County, JOHN A WOOD, Esq. formerly Sheriff of that County.

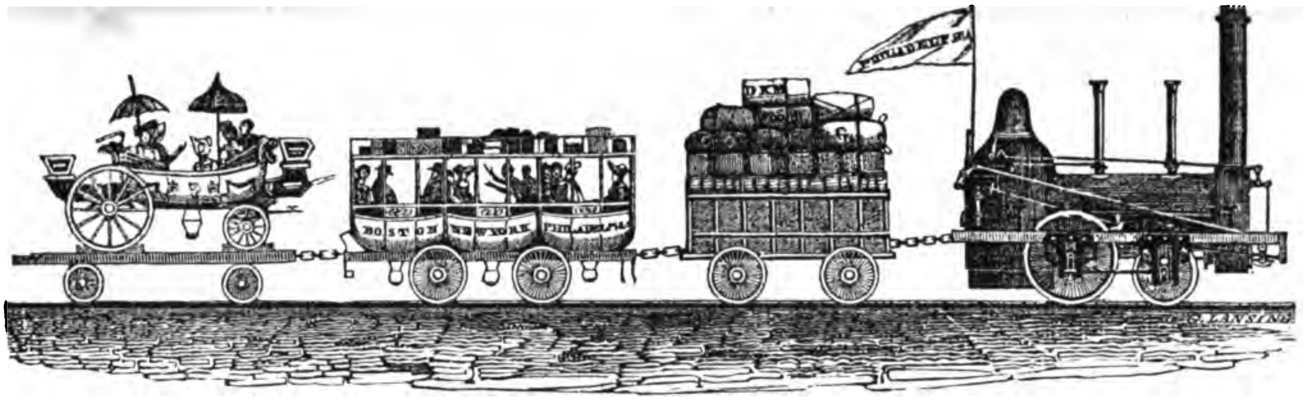
On the 13th October, at Alton, Illinois, BENJAMIN IVES GILMAN, late of this city, in the 68th year of his age.

In Hartwick, on the 23d inst. of consumption, Mr. ORIMEL EDSON, aged 41 years.

At Kinderhook, N. Y. on the 23d ult., ANDREW MELISS, a native of Scotland, and formerly a merchant of this city, in the 47th year of his age.

At Carthagena, on the 12th September, last, of the yellow fever, Mr. Abram Kashow, late of this city, in the 24th year of his age.

In the death of this young gentleman, thus cut down in the bloom of manhood, society has sustained no ordinary loss—but to numerous friends whom intimate association had made acquainted with his many amiable qualities, the loss is irreparable. To a heart possessed of every noble attribute which could adorn or dignify our nature, he joined a highly gifted mind, which application to the ample page of Knowledge had richly endowed with intellectual beauties. Affable in manner, manly and generous in action, ardent and sincere in his attachments, he won all hearts; and though now reposing in the dreamless sleep of eternity on a foreign shore, he will not be forgotten. Loved in life, he will be sincerely regretted in death; and the fondest recollections will be cherished of his memory in the minds of those who knew and appreciated his gentleness and worth.—[Communicated.]



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, NOVEMBER 16, 1833. [VOLUME II.—No. 46.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, NOVEMBER 16, 1833.

The Alexandria Gazette copies from the Baltimore Gazette the annexed paragraph:

"Our experience in Baltimore, in regard to Railroad travelling, has furnished satisfactory evidence to sustain fully the opinion, 'that it is the most secure mode of travelling.'"

And then remarks that

"*Our* observation, made by a perusal of public prints, from all parts of the country, satisfies us that Railroad travelling is the most *insecure* mode that has ever yet been invented. We speak entirely without prejudice."

We should have been inclined, but for the candor of the editor of the Alexandria Gazette, in disclaiming any thing like prejudice, to believe that he was somewhat under its influence when he says that he has, "from reading the public prints from all parts of the country, *satisfied himself that railroad travelling is the most insecure mode that has ever yet been invented.*" He is, however, a gentleman of too much candor to be suspected of a desire to prejudice others, and we must therefore conclude that he has forgotten the frequent and appalling accounts of *steamboat explosions*, by which, not only hundreds, but *thousands*, have lost their lives. It is true, and we would not wish to disguise, that several *serious* accidents have occurred upon railroads—not so many however as to render them liable to be considered the "*most un*safe mode of travelling ever yet invented." It appears to us from the information we have received, that most of the accidents which have occurred to persons, on our railroads, have been occasioned by the carelessness of the persons injured, and not from any mismanagement of the Railroad Companies, or their special agents. No agent or engineer should be held accountable for the indiscretion of a passenger, who attempts to get from a car when in motion, or other persons attempt to cross the *track* in front of a train of cars.

The late unfortunate accident on the Camden and Amboy Railroad, as serious as it is, cannot, we think, from the report, which will be found in the Journal, of a committee of investigation, be chargeable either to want of care in the arrangements or in the agents, as we presume there is not another company in this country which has taken more care to *prevent* accidents than that of the Camden and Amboy Railroad. An agent expressly to *keep the time*, and another to tend the brake, and keep a look out and give notice of danger.

We think we shall be borne out by facts when we estimate the loss of life and property by the explosion and destruction of *steamboats*, to be at least *twice*, if not three times, as great in an equal number of passengers, and amount of business, as by accidents upon, or pertaining to, railroads. And as an additional, and, we regret to say, most melancholy evidence of it, we give the following heart-rending account of new disasters on the Mississippi river, by which *forty* lives were lost, and several others seriously injured, with the loss of more than $200,000 in property.

From the New-Orleans Mercantile Advertiser Extra, of Friday, Nov. 1.

DISTRESSING.—It is with feelings of the deepest regret we lay before our readers the following distressing news, politely furnished us by the clerk of the steamboat Black Hawk, arrived here this morning about half past four o'clock.

Extract from log-book of steamboat Black Hawk, P. S. Hartshorne, master, October 29, 5 P. M.:

At Foot of 98, discovered the wreck of steamboat New-Brunswick, came to, and took on board one of her crew, from whom we learnt that she took fire the day before, at 4 P. M. and was entirely destroyed—no lives lost, but that none of the cargo was saved.

ANOTHER, AND MORE DISTRESSING.—Oct. 31, came up to the wreck of the steamboat St. Martin, two miles above Donaldsonville, rounded to, and received on board those that were saved.

The St. Martin was from Bayou Sarah, and had about 500 bales of cotton and 90 hhds. sugar; she was discovered to be on fire about 12 o'clock *this day*, and melancholy to relate about 40 persons were LOST by fire and water. Of the officers and crew missing are the captain, clerk, 2d mate, 2d steward, cabin boy, chamber maid, 2 cooks, bar keeper, 4 sailors, and 5 firemen. Several passengers were lost, among the number Capt. Sengstack, N. Moss, Esq. of N. Orleans, and servant, Mr. Whiting, of Franklin, Mr. Easton and servant, of Opelousas, Mr. Allen, Mrs. Willis, of Bayou Sarah, a lady, name unknown, and 3 servants—Mr. J. F. Miller, of New-Orleans, was badly burnt—several passengers say that she had on board about *fifty thousand dollars*, belonging to some of the Banks in New-Orleans, which is lost.

JOHN W. OWENS, Clerk.

RAILROAD.—We are gratified to learn that the railroad will be ready for the transportation of passengers and goods, as far as the Bo gen hill, by about the 1st of December. The rails are now laid, we understand, except upon about half a mile of this distance, and the bridges all completed. Our manufacturers and others will, we presume, gladly avail themselves of its facilities, which will be especially important in the coming season of bad roads, and when the river is closed. Suitable arrangements will of course be made for the conveyance of passengers and goods from the termination of the railroad to and from the ferry.—[Paterson Intelligencer.]

CLINTON, Oct. 25, 1833.

We learn that Col. Crozat, civil engineer of the State, and Mr. Welch, the assistant engineer, have resumed the survey of the Clinton and Port Hudson railroad.—[New-Orleans Mer. Adv.]

PENNSYLVANIA CANAL.—It is stated in an official report of the receipts and business of this canal for the year past, ending on 1st November, that the canal was only closed one month during the year, February, and such, it is added, has been the case ever since it was first opened. This is a fact of great interest to New York, as unless we can compensate by a reduction of tolls and greater facilities of transportation, for the greatly longer period (from three to four months,) during which, the Erie canal is closed, we may be in danger of seeing a considerable portion of its trade to the far West diverted.

Internal Improvements, No. I. By F. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

Sir,—Mechanical knowledge is now making rapid strides towards perfection, exercising in its progress a genial influence over the arts and sciences of the civilized world, strengthening its ties of intercourse, and dispensing plenty and intelligence where formerly misery and ignorance held their sway. The invention of the steam engine alone may be regarded as a new era in the domestic policy of nations. and since the important step made by Watt in reducing its principles to practical application by an investigation of its physical properties, its course has been steadily onward, engaging in its service more talent, ingenuity, and labor, and producing more national and individual wealth, than any other human invention. Its gradual development gave an impetus that has led to all the numerous discoveries and improvements in the different branches of manufactures, and raised them to their present high state of perfection. But a few years have elapsed when the wondrous effects now resulting from the application of this subtile fluid, before its capacity of adaptation was known, could only have found place to grace the pages of fiction, or adorn a tale of romance. Who would then have credited the assertion, if made, that hundreds were under its influence, daily travelling the country, navigating rivers, and traversing lakes and seas, at the rate of thirty miles per hour; and that at this high degree of velocity they were in the indulgence of every luxury and comfort that their own private apartments could afford? Had its accomplishment been then predicted, instead of serving as a beacon-light to guide the intelligence of men of science and learning, it would have been treated simply as the wild dream of an enthusiast, and elicited naught save contempt from many who are now proud to acknowledge themselves among its warmest advocates. For there are many persons still living, scarce passed the meridian of life, who blush to have regarded the idea as visionary; and, refusing the subject the effort of a thought, have even suspected the intellect of the person who predicted its eventual realization. Strange as this incredulity may now appear, it is none the less true; and a few years may yet prove to us that the principle is in its infancy; that it is destined to fulfil still higher duties; and that its sphere of usefulness is to be widely extended. It would be no unprofitable lesson to mark the influence which physical science, in its different stages, has exercised over the moral and political character of nations. It would be found that nearly in the same proportion that mechanics have advanced towards perfection, the world has advanced in civilization; that as its principles have been developed, its condition has been bettered; in short, it has been one of the grand moving principles by which these effects have been produced. But this investigation becomes not the present paper; and however grateful be the task to pay a passing tribute to the inventive talents and sublime genius of the great men who have preceded us, and laid the foundation on which the superstructure of civilization is being reared, it must be abstained from here to give place to the matter more immediately claiming our attention.

The astonishing change effected by the system of internal improvements, in the transition of persons and intelligence from place to place, has been productive of consequences not easily to be calculated. Distances being now estimated by *time* instead of *miles*, the mind and exertion of communities, hitherto isolated and deprived the benefits of free intercourse, become concentrated in proportion with the increased velocity of locomotion. A mutual dependance and interchange of commodities is established, which, in enlarging ideas and creating wants and desires before unknown, must operate beneficially as an incitement to increased activity for their accomplishment. It must be borne in mind that a portion of the price of every article of necessity or luxury is composed of the cost of transporting it from producer to consumer; and consequently, that every reduction in this cost must produce a corresponding reduction in the price of the article transported. Should this portion be considerable in relation to the whole price of the manufactured article, it would be no difficult matter to demonstrate that its market value would be proportionably lessened; and as lessened, that its consumption would be proportionably increased. This observation is not confined to the home markets, but will likewise apply in its degree to the foreign, giving birth thereby to a spirit of competition, which alone, on either side, can stimulate the inventive genius of the operator to greater enterprize for the palm of mastery and the attainment of excellence.

Another consequence arising from increased cheapness and facility of transport, is a fresh demand for manufacturing population. All manufactured articles, as their uses become known, gradually cease to be regarded as luxuries, and enter more generally into the wants of every-day life. To meet the increased consumption necessarily attendant on this state of things, an increased number of operators must be employed; and this, in its reaction on the agricultural interests, will produce an extended market for that species of produce. Indeed, the benefit to the agriculturist is far greater than to the manufacturer; because the proportional expense of transporting all productions of the soil is much greater than that of transporting those of the loom, and in many instances enters so largely into its whole price as to preclude its cultivation, except for domestic purposes. To the agriculturist, therefore, it becomes a matter of still higher import that such means be devised as will place him on a more equitable footing with his more fortunate neighbors; and to this end he should, before the tide of prosperity has entirely run out and left him a prey to want, in some unfriendly shoal, direct his remaining energies to the accomplishment of such improvements of intercourse as nature and art may have placed at his disposal.

It is disagreeable to anticipate even in thought what might be the result of a continued deprivation of these facilities to any community, where indolence has taken the place of industry; and vice and misery, its usual concomitants, have breathed their pestilential influence over the notions of its members. Many a melancholy picture might be adduced in illustration from the experiense of other countries, at the bare relation of which the heart of the philanthropist would sicken in sorrow; and many a parallel might have been deplored as a curse to this happy country, had not the soaring genius of a Clinton, in defiance of the vulgar prejudices of the day, predicted and finally executed a work that will command the admiration of ages, and stand a cenotaph to perpetuate his name to a grateful posterity. F.

New-York, 10th Nov. 1833.

Specification of the Patent granted to Joseph Saxton, *of Sussex street, in the County of Middlesex, Mechanician, for Improvements in Propelling Carriages, and in Propelling Vessels for Inland Navigation.* Dated June 20, 1833. [From the Repertory of Patent Inventions.]

To all to whom these presents shall come, &c. &c.—*Now know ye*, that in compliance with the said proviso, I, the said Joseph Saxton, do hereby declare the nature of my invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following description thereof, reference being had to the drawing hereunto annexed, and to the figures and letters marked thereon, that is to say,

My invention consists in the application of pulleys of different diameters, which I denominate "The Differential Pulleys," or of a pulley and wheels, according to the principles hereafter described, whereby I am enabled to take advantage of the results which are obtained from such difference of diameter, by obtaining considerable velocity to carriages, or to vessels used in inland navigation, whilst the rope by which the motion is produced is caused to act through a very small space, in proportion to the distance travelled by the carriage, or by a vessel used in inland navigation, as will be fully described hereafter, when I come to describe the various figures shown in the drawing. But in order that my invention may be most fully understood, it will be desirable, in the first place, to go into a short description of the principles on which my improvements act, before I describe their application to carriages, and to vessels for inland navigation.

Fig. 1 represents a combination of two pulleys, their diameters being as six to seven, *a* being the larger pulley, and *b* the smaller one. *c d* is an endless rope, passing over the sheaves *e e;* and it should be observed, that this endless rope takes a turn around each of the pulleys, *a* and *b;* that is to say, the part *c* taking a turn around the larger pulley *a*, and the part *d* taking a turn around the smaller pulley *b*. If then the rope *d* be caused to move in the direction of the black arrow, (the upper one,) it will have a tendency to draw the lower part of the pulley *b* in the same direction with the rope *d*, meanwhile the part *c* of the endless rope will be moving in the direction of the dotted arrow, (the lower one,) and will have a tendency to move the lower part of the pulley *a* in the same direction with this part of the rope; consequently, the two pulleys *a b*, (they being fixed together,) would turn on the mean point *f*, as a fulcrum. *g* is the centre of the two pulleys. Let it then be supposed that the part *d* of the endless rope be moved from *h* to *i*, it will be evident that the centre *g*, of the differential pulleys, *a b*, would be moved to the point *j;* and, consequently, if any object were connected to the centre *g*, of these differential pulleys, it would be propelled from *g* to *j*, by the endless rope, *c d*, being moved the much smaller distance of *h* to *i*, as is clearly indicated by the dotted lines, and these distances will be as thirteen to one.

Having now shown the principles on which the differential pulleys act, the various applications hereafter described will be readily understood. And I would observe, that in all the other figures in the drawing, the same letters of reference will be used to indicate similar parts, wherever they occur.

Fig. 2 represents my improvements applied to a carriage, the construction of which is represented to be an omnibus for the carriage of passengers; but it is evident the description of carriage is immaterial, and will vary to suit the purposes to which the carriages are to be applied. The carriage is placed on four wheels, as usual, two of which wheels, *k, k*, are shown in this figure. *a*, and *b*, are the differential pulleys, applied to the carriage according to my invention, *a* being the larger pulley, and *b* the smaller one. These pulleys are placed on an axis *g*, see fig. 3, which represents the pulleys, together with the parts in which they are placed. *m* is an arm or frame, which carries the differential pulleys, and which is fixed to the carriage, as shown at fig. 2: the arm *m*, being cylindrical, and capable of turning in bearings, *n n*, affixed to the carriage. The object of this turning of the arm *m*, is to permit the pulleys *a, b*, to stand at an angle, by which the endless rope may be led into the sheaves, when the carriage is going in a curved direction. The projecting arm *m* is forked at the outer end, as shown in figs. 2 and 3, at *o o;* and the forked ends serve as bearings to the axle *g*, of the differential pulleys, *a* and *b*, the pulley *a* being per-

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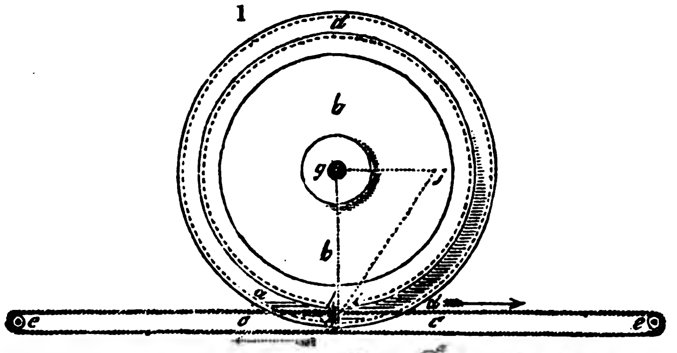

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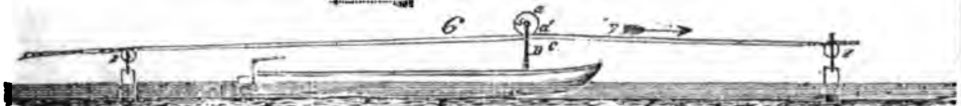

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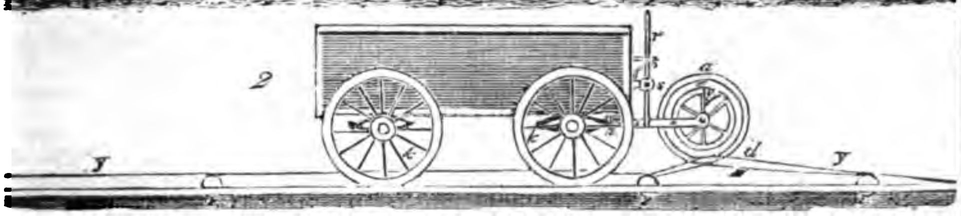

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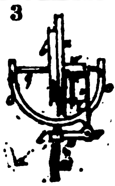

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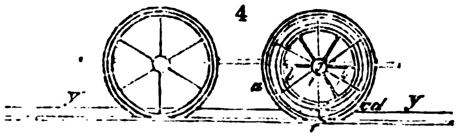

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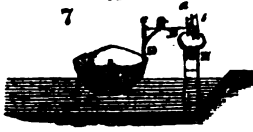

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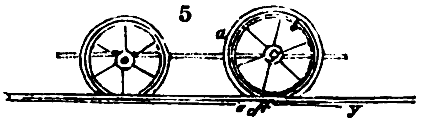

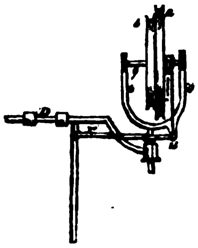

Showing the projecting arm D, separately, on a larger scale. Endless rope to work the lever *r* for putting the pin or bolt *q* in or out, for connecting the pullies *a b*.

y y, endless rope—*z z*, sheaves.

manently affixed to the axle *g*, whilst the pulley *b* is capable of turning loosely on this axis, when it is not retained by the pin or bolt *q*, which locks the two pulleys, *a* and *b*, together at the times required, and thus they are at such times the same as if they were permanently attached to each other; the object of thus having the means of disconnecting the two pulleys, *a* and *b*, is, that by disconnecting them, the power will no longer tend to drive the carriage, as will be fully described hereafter. *r*, fig. 2, is a lever, turning on a fulcrum *s*, the bearing of which fulcrum is attached to the carriage. The upper end of this lever, *r*, is formed into a handle, and is in such a position, that a person sitting in front of the carriage may have it under his control; the other end of the lever *r*, that is, the part below the fulcrum, has a crotch, which receives the flanch *t*, of a sliding-socket *t*, within it, as shown in fig. 2: this socket slides on the arm *m*, according as the lever *r* is moved out from, or drawn towards, the carriage. *u*, is a cranked or bent lever, having its fulcrum at *v*, on the forked frame *m o*, as shown in fig. 3. One end of this cranked lever *u* has a crotch, which receives the flanch *t*, of the sliding socket *t*, see fig. 3; and the other end of the bent or cranked lever *u* has also a crotch therein, by which it is enabled to slide the socket *w*, on the axis *g*, backwards and forwards. *x*, is an arm, affixed to the sliding socket *w*, through which the bolt or pin *q* passes, and this pin or bolt passes through one of the spokes of the wheel or pully *a*; and when it protrudes beyond the pulley *a*, it passes between the spokes of the pulley *b*, and, consequently, when the pin or bolt *q*, comes in contact with one of the spokes, or the part of the inner rim of the pulley *v*, which is cut away (as shown in fig. 2) for that purpose, the two pulleys will be held securely together. On the bolt *q* is placed a spiral spring, its object being, that in case the lever *r* be moved for the purpose of forcing in the bolt *q*, at a time when it is not opposite the part of the inner rim which is cut away, the spiral spring will have a tendency to force in the bolt, yet at the same time will not offer sufficient resistance to prevent the turning of the pulley, and the bolt *q* will be forced in, when the part of the pulley where it is cut away comes opposite to the bolt; at the same time there is a spring to prevent a sudden concussion.

In fig. 2, *c d* is an endless rope, the part *c* taking a turn around the pulley *a*, and the part *d* taking a turn around the pulley *b*, as described in fig. 1. This endless rope is supported, at proper intervals of the road, on sheaves (as shown in fig. 2,) to prevent the rope falling on the ground, and thereby greatly increase the friction; this endless rope passes around a rigger at each end, by which the rope is kept sufficiently tight; but to insure the endless rope being kept sufficiently tight, I cause one of the riggers around which the rope passes to be placed in bearings capable of being slided in the direction of the length of the railway on which the carriage travels, and then, by means of weights attached to a rope or chain, and passing over a pulley affixed at the top of a well, and having sufficient weights attached to keep the endless rope, *c d*, sufficiently tight to prevent it sliding on the differential pulleys, *a b*.

Having now described the various parts shown in figs. 2 and 3, I will proceed to describe the manner of their action; in doing which, I will suppose the bolt or pin is passed through the two pulleys, *a* and *b*, and thus retains them together, as if they were permanently fixed to each other. If, then, the endless rope *d* be moved in the direction of the arrow, a similar action will take place to that described in fig. 1, that is, the carriage, being attached to the centre *g*, of the differential pulleys, *a* and *b*, will be propelled forward on a railway with a much greater velocity than the rope travels; and the distance so travelled by the carriage, in comparison with the distance through which the rope moves, will depend on the difference of the diameters of the pulleys, *a b*; and the nearer the respective diameters of the pulleys approach each other, the greater will be the relative velocity the carriage will travel, to the velocity with which the rope moves.

In order to prevent the two parts of the rope rubbing against each other, in leading on and off the differential pulleys, the axis *g* of these pulleys is placed at an angle, a little varying from a right angle with the direction of the motion of the carriage.

Figs. 4 and 5 show two applications of my improvements, but in these figures the applications somewhat vary from that shown in fig. 2; for in these instances there is only one pulley, whilst the two front or two back wheels of the carriage act the part of the other pulley.

In fig. 4, *a* is one of the front wheels of the carriage, which also acts as the larger pulley; *b* is the smaller pulley, and is the only one around which the rope, *c d*, passes. The wheels *a*, and the pulley *b*, being on the same axis *g*, which runs from side to side of the carriage, and turns in bearings affixed to the carriage.

In this arrangement, the point *f*, at which the wheels touch the rail, becomes the fulcrum on which the wheel *a* turns; and it will thus be evident, that if the rope, *c d*, be drawn forward, in the direction of the arrow, a similar effect will be produced, as described in fig. 2, and as is clearly shown by dotted lines in fig. 4; yet, at the same time, if the wheels and pulleys, *a* and *b*, be of the same relative diameters as those in fig. 2, the carriage at fig. 4 would only be propelled at the velocity of seven to one, owing to the fulcrum, at which the wheels *a* turn, being removed from the main point *f*, fig. 2, between the two diameters, and placed at the extreme end of a radiating line, drawn from the centre of the wheel *a*, to the point at which it touches the railway.

In fig. 5, the rope passes around the pulley *a*, which is larger, whilst the carriage-wheels act the part of the smaller pulley *b*. The pulley *a*, and the wheels *b*, being on the same axis *g*.

In order that the pulleys in this arrangement may stand at an angle for clearing the rope, the axle *g*, is formed of three parts, connected by universal joints, and one of the wheels *b* thus travels a little forwarder than the other, and thus the rope will clear itself. And it should be observed, that in both these arrangements, the pulley around which the rope passes is to be made capable of being disconnected from revolving with the axle, as described in figs. 2 and 3. In the arrangement, fig. 5, the fulcrum *f*, on which the wheels turn, is the point at which the wheels *b* touch the rail or road; and the difference in the arrangements figs. 4 and 5, is, that the power in fig. 4 is applied by the rope between the fulcrum *f*, and the centre *g*, of the wheels or pulleys, *a b*, where the weight to be drawn is attached; whilst in fig. 5, the fulcrum is between the centre of the pulley and wheels, *a b*; consequently, the arrangements differ in the order of leverage, and in this instance the velocity will be as six to one.

In these two last arrangements, the rope, *c d*, may be either an endless rope, as described in figs. 1 and 2, or the rope may be single, and taking a turn around the pulley *a*, or *b*, is to be wound on and off a drum at each end of the distance, which is to be run by one length of rope.

Having now described my improvements, as applicable to the propelling of carriages, I will proceed to describe their application to the propelling of vessels in inland navigation. This application is an arrangement similar to that shown and described in figs. 2 and 3. A representing a canal barge or boat, having an upright standard B, affixed on one side thereof, see figs. 6 and 7; at the top of this standard, the bearings, C C, are formed to receive the projecting arm D: in other respects the parts are similar to fig. 2, and the same letters are used to denote the various parts.

At proper intervals sheaves are placed on standards at the side of the canal or river, to support the rope *c d*, as shown in these figures. In propelling vessels, the same description given of figs. 1 and 2 applies, and is fully descriptive of the effect which takes place by the application of my improvements.

Having now described the nature of my invention, and the manner of constructing and applying the same, I would observe, that the power to be employed for causing the rope, *c d*, to be moved, may be varied according to circumstances. Thus, for instance, by attaching a horse or horses, according to the power required, to the rope, *c d*, and causing it to move slowly, a very considerable velocity will be obtained; or the power may be derived from a fixed steam engine, or water-wheel, or manual labor. And in order to have perfect control over the carriage or vessel, and be enabled to stop at any time, although the rope is continuing to move, it will be necessary to separate the two pulleys, *a b*, by withdrawing the pin or bolt *q*; the power will then no longer act to propel the carriage or vessel, and, consequently, there will only be the momentum already obtained, by the carriage or vessel, to be overcome, and this in a carriage may be effected by aid of a brake on any of the carriage wheels, *k*.

Having now fully described the manner of applying and using my invention, I would have it understood, that I lay no claim to the parts separately of which the same is composed; and I would observe, that some of the details may be varied to meet the various circumstances to which works of this kind are at all times liable, but which will be readily arranged and adopted by any engineer competent to undertake works of the like nature. And I would further observe, that I am aware that endless ropes, as well as drag-ropes, have been before known and used for the purposes of propelling carriages and vessels, but in such cases the carriage or vessel travels only at the rate of speed with the rope; therefore, the use of an endless rope or a drag-rope forms no part of my invention, and are only necessary means for effecting the object of my invention, as above described. And I do hereby declare, that I confine my claim of "Improvements in propelling Carriages, and in propelling Vessels for Inland Navigation," to the application of the differential pulleys, or of a pulley and wheels, *a b*, for propelling carriages and vessels, as above described, whereby I am enabled to take advantage of the results which are obtained from the difference of their diameters, and thus obtaining considerable velocity to such carriages and vessels, whilst the rope by which the motion, of the carriage or vessel, is produced, is caused to act through a very small space, in proportion to the distance travelled by the carriage or vessel, as above described.

In witness whereof, &c.

Specification of the Patent granted to WILLIAM RANGER, *of Brighton, in the County of Sussex, Builder, for a Cement or Composition, which he denominates "Ranger's Artificial Stone."* Dated June 4, 1833. [From the Repertory of Patent Inventions.]

To all to whom these presents shall come, &c. &c. *Now know ye*, that in compliance with the said proviso, I, the said William Ranger, do hereby declare, that the nature of my said invention, and the manner in which the same is to be performed, are particularly described and ascertained in and by the drawing hereunto annexed and the following description thereof, that is to say:

My said cement or composition is intended, as above mentioned, to form blocks or masses of artificial stone, to be used in the construction of buildings, in place of brick or stone, or in union with either or both of them, as occasion may require; and I compose it of silicious or other fit and proper, hard and unchangeable matters; of powdered lime in its pure or caustic state; and of water boiled or heated; and which said water I employ as hot as conveniently may be, in mixing the different ingredients. I likewise occasionally dissolve a portion, more or less, of sulphate of iron in this water, as well also as caseous and other matters, when thought desirable. I prefer to use such stone-lime as contains a portion of iron; such, for instance, as that procured in the neighborhood of Dorking, or Reigate, in the county of Surrey; also, gray-stone lime, lime from blue or yellow lias, or any other lime which is fit and proper for the purpose: and I employ it in the state of a dry powder, not slacked, as usual. The silicious or other hard materials or matters may be such as are commonly employed; for instance, river or sea sand; skreened shingle from the sea-shore or beach; the two latter, however, well washed in fresh water to free them from sea-salt; or I can employ broken flints, free-stone, copper slag, or other fit and proper materials of similar natures. Any, or either of these substances, as well as the lime, I separate or reduce into finer or coarser parts, either by hand, or by the employment of machinery similar to that used in making Roman cement, or any other which is fit and proper for the purpose, agreeably to the nature of the artificial stone I design to employ them to form. In general, I prefer to use them in the following proportions, videlicet,—silicious or other hard materials or matters, thirty pounds; powdered lime, three pounds; and boiling or hot water, either containing or not the above matters in solution, one pound twelve ounces. I can, however, vary these proportions occasionally, although I have hitherto found them the best in practice. I avoid mixing more of these materials at once than will be sufficient to fill the mould, as, owing to the heat produced by the boiling or heated water, the setting or concreting action begins to commence instantly they are put into the mould; and, in general, the mass of artificial stone becomes sufficiently firm in the course of about ten minutes, to admit of the sides and ends of the mould being removed, and the block left upon the bottom of it, ready to be taken to the place where it is to remain to dry and harden, and which will usually happen in the course of a fortnight, when the block or mass will be fit for use. I cause the materials to be carefully rammed close in all their parts, whilst filling the mould with them, in order to expel the air; and remove any excess thereof by passing a straight iron bar or scraper along the top of the mould; I can, then, likewise, when thought desirable, fill any interstices or cavities left in the face of the block, with materials of a finer consistency. The moulds will, of course, vary in their forms and manner of framing them, according to the shapes intended to be given to the masses or blocks of artificial stone; as, for instance, whether they are to be plain, or moulded in flutings, or otherwise ornamented or decorated; or whether to be square, circular, or of any other shapes, so that it is quite impossible to afford examples to any extent. As, however, it may be desirable to give some idea of their construction, I shall proceed to do so by describing the several figures contained in the drawing, which, as aforesaid, is annexed to this specification, and which represents the various parts of a wooden mould intended to form plain oblong blocks of artificial stone, each part being designated by a similar letter of reference in all the figures. *e* is the bottom of the mould, resting upon and strengthened by the two cross-pieces, *f f*. *g g* are the sides of the mould, each having two upright grooves formed in it, as shown at *h h h h*, in the plan, fig. 1, to receive and retain the ends *i i* of the mould in their proper situations. These sides and ends are held together by means of four iron bars *j j j j*, whose ends are bent at a right angle, so as to form clamps, as shown in fig. 1, between the inner ends of which said clamps and the sides of the mould wooden wedges may be tightly driven, to hold the mould together in use, and be as easily removed again when it is to be taken asunder. There are also two wooden ledges *k k* affixed upon the bottom of the mould, as shown in the end section, fig. 5, to retain the sides and ends of it steadily in their places upon it in use.

Fig. 1—PLAN.

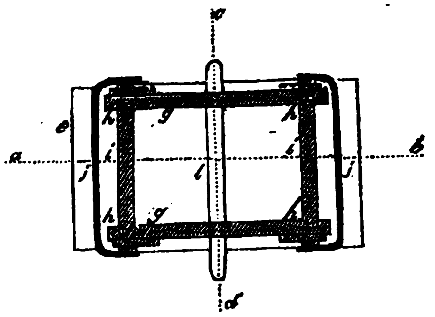

Fig. 2—SIDE ELEVATION.

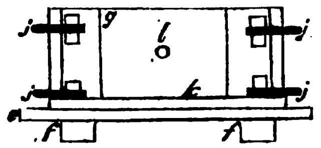

Fig. 3—ELEVATION.

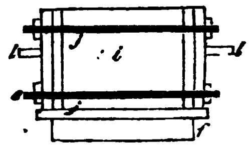

Fig. 4—SECTION THROUGH *a—b*.

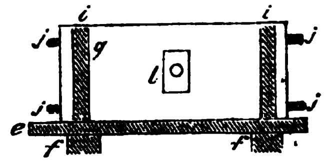

Fig. 5—SECTION THROUGH *c—d*.

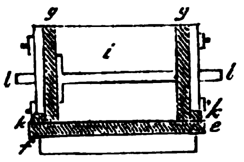

Fig. 2 is a side elevation, and fig. 3 an end elevation of the mould; and fig. 4 is a side elevation and section of it, taken at the dotted line *a b*, in fig. 1.

Fig. 5 being an end elevation and section, taken at the dotted line *c d*, in fig. 1. *l*, in all the figures, is a bar passed through holes made in the sides of the mould, to form a hole through the block of artificial stone. I prefer to place the blocks or masses of my artificial stone in the open air to harden, and even to wet them occasionally during that operation.

I do not mean, or intend hereby, to claim as my invention, the use of hot water in mixing mortar for building with; but I do hereby claim the employment of boiling or hot water in combination with dry powdered caustic lime, and silicious or other hard matters, in the manner and in the proportions hereinbefore described, as my invention, and as essential to the forming of my said blocks or masses of artificial stone.

In witness whereof, &c.

GREAT SOUTHERN RAILROAD.—The following is taken from the National Intelligencer. It indicates a proper feeling on the part of the inhabitants of that section of Tennessee, bordering upon the river and State of Mississippi. There can be little doubt that great and lasting benefits would result to the south-western States from the construction of a railroad from Charleston to the Mississippi, on or near the route indicated. Indeed, it would not be saying too much, to say that the country would in ten years increase in wealth to at least twice, and probably to three times, the cost of the road, even if it should cost $10,000,000.

Great Project.—A Convention of Delegates, from the counties of Madison, McNairy, Hardeman, Fayette, Shelby, and Tipton, in Tennessee, assembled at Bolivar, in that State, on the 14th of October, to take into consideration the improvement of the means of communication between different sections of the county, in which they are interested. Maj. Gen. Edmund P. Gaines, of the United States Army, was appointed President of the Convention, and R. A. Parker, Secretary.

On the 15th, a Committee, appointed the preceding day, and of which, by order of the Convention, Gen. Gaines was made Chairman, reported a series of resolutions, of which we subjoin the five first, all of which were adopted:

1st. Resolved, as the opinion of this meeting, That a Railroad between the Mississippi River and the Atlantic Ocean, to pass through the Alabama, and Georgia, and the southern part southwest border of the State of Tennessee, the notrhern parts of the States of Mississippi, of South Carolina, is *practicable* and *desirable*; that its anticipated local benefits and national advantages may reasonably be estimated as greatly to exceed the whole expense of its construction, and that it ought to be commenced forthwith.

2d. Resolved, as the opinion of this meeting, That the proposed Railroad will contribute more in ten years time, by the cheapness of its means of transportation of merchandize and country produce, than will be sufficient to defray the whole expense of its construction.

3d. Resolved, as the opinion of this meeting, That the proposed work, as a measure of *national defence*, would contribute more, by the facilities it will afford in the transportation of troops and munitions of war, to the protection and security of the southeastern States and East Florida, than all the fortifications constructed or designed to be constructed, south of the Chesapeake Bay; for it is obvious to every man of military mind, that the strongest fortifications must depend mainly for defence and preservation on prompt and seasonable supplies of *fighting men*, with arms and subsistence; and that these cannot be promptly wielded from the interior to the frontier, without good roads, railways, canals, or large navigable streams, and a railway will cost much less than a Macadamized road.

4th. Resolved, as the opinion of this meeting, That the proposed Railroad, in a political point of view, will be found to be one of the strongest links in the chain of the *union* of the twenty-four States.

5th. Resolved, as the opinion of this meeting, That —— be appointed a Committee, whose duty it shall be, by sending memorials to Congress, and to the Legislatures of the several States mentioned in the fourth resolution, and by such other means as they shall deem expedient to carry into effect the foregoing resolutions, and they are hereby especially authorized respectfully to request the President of the United States to direct an officer of the corps of Topographical Engineers to make the requisite surveys and estimates, preparatory to the commencement of the proposed Railroad.—[Nat. Intel.]

Tow Boat.—The charge for towing the ship St. Louis up to Natchez, was thirteen hundred dollars.

[*From the New-York American.*]

The Accident on the Amboy and Camden Railroad.—The explanation which the company owning this road have made in the address we publish to-day, proves, as it seems to us, conclusively, that the fatal accident of last week was one of those occurrences which scarcely any human foresight or caution can guard against. It is satisfactory to find that, so far as strict vigilance, and all proper means of enforcing attention to the safety of passengers, and the regulation at a due speed of the carriages, are concerned, this company are free from reproach. No mode of conveyance is exempt from accident, or can be made so; but we do not hesitate to express the belief, that steam conveyances, whether on land or water, will be found, reference being had to the numbers they transport, vastly less hazardous than the dullest stages or the surest sailing vessels.

Address of the Camden and Amboy Railroad and Transportation Company.

To the Public.

The unfortunate accident which occurred on the road on Friday last, and the melancholy consequences resulting from it, have occupied the most serious attention of the Executive committee of the Board of Directors. Every exertion has been made to obtain a correct statement of all the facts, that they might be disclosed to the public.

The security of the passengers from the commencement of the operations of this company, has been an object of the first consideration. For several weeks after a sufficient number of locomotives to carry the passengers, were completed, and on the line, the horses were continued, notwithstanding the importunity of the public for the change. The most unfounded reports as to the capacity of the road for the use of this species of power, were circulated and believed from this delay. During all this period, however, the engines were constantly in use, when the line was free from the passenger cars, in transporting merchandize and materials on the road.

The Directors preferred the odium attached to their delay to the risque attending the substitution of the engines until the engineers had become familiar with their use. They were then placed on one line only, that they might be under the immediate superintendance of confidential agents of the Company. Positive instructions were given that the trip [35 miles] should not be made in less than two hours and a quarter; allowing two hours, or a speed of seventeen and a half miles per hour, for the actual running of the engine, and fifteen minutes for the necessary stoppages. Special instructions were also given that no one mile should be run in less than *three minutes*. To ensure a compliance with these orders, an agent was placed on each line, whose *special* and *only* duty is to take the time of running each and every mile, with a stop watch, for the government of the engineer, and to note down the same, and report to the Executive Committee. From the commencement these reports have evinced so nearly a compliance with the orders as to be entirely satisfactory. From a careful inspection of the reports of the week immediately preceding the accident, it is discovered that the time actually occupied in running, shows an average rate of eighteen miles per hour, and the fastest trip was at the rate of 19 miles. Unfortunately the time keeper of this line had sustained a slight injury from a fall a day or two previous, and was not then on the line. As the engineers had become so well regulated in their time, it was deemed unnecessary to procure another agent to fill this temporary vacancy.

Had this officer been at his post, the first subject of inquiry, to wit: the rate at which the cars were running, would have been attended with no difficulty. From the excitement naturally produced by the disaster, it has been found impracticable to obtain accurate information on this subject. The committee are led to the conclusion, however, that a short time before the occurrence of the accident, the speed of the engine had considerably exceeded the rate allowed, but that at the time and immediately before, this was not the case. This opinion is induced by the following facts:

There were two trains of cars attached to separate engines. The accident happened to the last train. The first engine is the least powerful on the line. The engineer is positive that so far from being in advance of, he was behind his time. He moreover states that from inadvertence his fire had got down and his steam was so low as to render it difficult to maintain his proper speed at that point, as the road there ascends. The committee are satisfied that the orders had not been materially violated as to the whole time of running the distance.

But it appears that owing to some trifling derangement of the second engine, the engineer, about three miles before, had reduced his speed to adjust it. After doing so, he states that to recover his proser station he increased his speed, but not in his opinion exceeding his limited rate. In this he was probably mistaken. But before the accident occurred he had checked the engine by shutting off a considerable portion of the steam, and is positive that he was not then running faster than the train in advance. This declaration is strongly corroborated by the fact, that one of the agents accompanying the line was on he top of the car which upset, and jumped from it to ground *without injury*, when he discovered that it was going over. From the place where he alighted to that where the car rested after the train was stopped, is not quite 21 yards.

The accident has also been attributed to the heating of the axle from friction for want of oil. It is understood that some of the passengers are under the impression that they saw smoke from this cause. This is clearly a mistake. The axles were examined at Spottswood, (not eight miles distant) by the agent whose duty it is to do so, and found perfectly cool and well supplied with oil. The appearance of the fracture is entirely inconsistent with this idea, and the quantity of oil still adhering to both the journal and box is conlusive, as that would have been entirely consumed by the heat.

These matters have been adverted to particularly, because the accident has been attributed to them, and the committee have felt bound to afford every information on the subject. They are convinced, however, that it is to be traced to other causes which could neither have been foreseen nor prevented, and that the fatal consequences were produced by a combination of circumstances that have never before occurred and in all human probability will never again occur.

Cast iron wheels have been entirely excluded from the passage cars on this road. The axles have all been procured from Boonston the most celebrated works in the country, at the exorbitant price of $125 per ton to ensure the quality of the iron. They are more than 50 per cent. stronger than those used for the passage cars of the Liverpool and Manchester road, and for still greater security the ends were all welded down before they were turned. Yet with all these precautions it appears by an examination of the broken axle that a latent defect existed in it which caused the accident. There was a flaw in it leaving not more than three eighths of the strength of the iron to sustain the whole weight, but as the defect was in the journal it was effectually concealed. This was the primary cause of the calamity. But the breaking of the axle would have been harmless as none of the passengers in that car received the slightest injury. It remains only to account for the injury to the other car.

It has been supposed the car was thrown from the track and upset by running over the wheel of the broken car. This is entirely an error. The axle broke in the journal, outside the wheel, so that both wheels remained attached to the axle, which at one end maintained its proper position, but at the other, having nothing to sustain it, dropped into the receiver, so that the spokes and the hub, which were of wood, were brought in collision with the iron on the frame, and nearly half of them splintered to pieces by the revolutions of the wheel. It has been this which was mistaken by the passengers for the *smoke of the axle*.

An agent is always stationed at the brake of the baggage car to keep a constant watch upon all the other cars, and to apply the brake and instantly apprise the engineer if any accident occurs. For the first time since the line has been in operation a spark had lighted on the baggage car, and ignited a bundle of cotton. The agent discovered this, and was in the act of extinguishing it when he discovered the breaking of the axle. Before he could recover his station and apply the brake, the car was thrown from the track, and so far over as to be beyond recovery. There is no doubt but that the impetus from the after cars caused the overthrow of this car. It is evident that it must have been projected forward by them and thrown on the front end, from the fact that of the twenty-four passengers in it at the time, those in the back apartment were uninjured.

This would have been effectually prevented by the application of the brake, but for the unfortunate mischance which drew the agent from his post at that critical juncture. No blame appears reasonably to be attached to the agent, as the train was then running on a portion of the line where there is a double track and perfectly straight for nearly six miles without even a turn-out to guard against.

These are the facts and conclusions arrived at after the most careful examination of this painful subject. Whilst the committee deeply deplore the event and sympathize with the unfortunate sufferers and their friends, they have to console themselves with the conviction, that the company cannot justly, be chargeable with the censure of the public. It is believed that in no similar enterprize, greater care has been taken to protect the passengers from injury, and that their intentions have been frustrated by an extraordinary combination of circumstances, not to have been foreseen or prevented by human foresight.

J. H. Sloan, *Secretary*.

Effects of Burying Iron and Steel in the Earth.

By Junius Redivivus. [From the London Mechanics' Magazine.]

Sir,—Some of the principal physical agents in the furtherance of human happiness being metals, and, amongst those metals, iron taking the foremost place, I was much gratified by reading your extract from the *Chronicles of Old London Bridge*, which seems to open some new views as to the further improvement of our national manufacture. But there is some obscurity in the statement of the circumstances, which it would be well to have cleared up, if possible, for the advantage of the experimentalists who may be inclined to trace the matter up to its causes, since 'this effect effective must come by cause.'

It seems that the burying of either steel or iron in the earth, for either 'three years,' or 'six or seven hundred years,' causes a decided improvement in its quality. Of what nature the improvement was, in the case of the razors which were buried, we are left in ignorance; but it seems that the change must have been wrought by an operation of natural chemistry, either taking something from the metal, or adding something to it, or both, by the process of chemical affinity. I should be led to imagine that both circumstances had taken place, as it is stated that, though a coat of rust had gathered on the razors, they were not eroded: that is, had sustained no loss of substance. The process would then be perfectly analogous to what is called the petrifying of wood, or other organized substances, wherein, as the organized matter decays, a deposit of lime assumes the same form. To get at the complete facts, we ought to know—first, the chemical analysis of the razor blades when first buried—secondly, the analysis of the 'earth' in which they were buried—thirdly, the analysis of the razor blades when they were again dug up—and, fourthly, wherein the improvement consisted, or what new qualities were acquired by the steel. Mr. Weiss would render a great service to science and art by stating these particulars as far as his experience enables him, if, indeed, it were not interfering with his profits as a manufacturer, to make his secret known. This no man can be called upon to do, unless for specific remuneration. But I take it for granted, that the author of the *Chronicles* states the *facts*, and that they are not of a piece with the proposition of the gardeners, that 'melon seeds should be worn some years in the breeches pocket previous to planting.'

In the case of the pile-shoes of London Bridge, which were of iron, a change took place in the straps which were in contact with the charred timber, and not in the solid points. This is a different case from the steel which was buried in the 'earth;' yet both the iron and the razor blades were *improved*, though the circumstances were different. A supposition is given, that, in the case of the iron, the change was wrought by galvanism. Very possibly; but it would be for the interest of manufacturers and the public to know it more certainly. 'Improvement,' and 'earth,' are far from definite terms, and a variety of chemical distinctions may be comprised in them. The object sought for is to effect, by the chemistry of art, in a short space of time, that which takes the chemistry of nature 'three years,' or 'some six or seven hundred years,' to accomplish. Are there yet data enough to work by? If not, they should be sought; and by careful inquiry and experiment, that would be made a matter of common knowledge which is at present a matter of uncertainty.* I have understood that your correspondent, Mr. Rutter, is one of the favored few possessing the rare combination of pecuniary means with public spirit. Surely the experiments I have endeavored to indicate offer a worthy field for the exercise of his talents. Yours, &c. Junius Redivivus.

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* In almost all our metallic manufactures, mechanism is in advance of chemistry. The latter science has never yet been properly pursued as a whole, by a united body of men, but is indebted for its progress to the energy of individuals, who have from time to time devoted themselves to it, principally at their own cost, and the public at large have benefited by their labors of love.'

Effects of Burying Iron and Steel in the Earth.

[From the London Mechanics' Magazine for May.]

Sir,—I very much doubt whether we possess sufficient information to warrant the conclusion, that burying iron and steel in the earth "causes a decided improvement in its quality."

It is a subject that well deserves minute investigation. I think, however, it belongs to the practical worker in these metals, rather than the experimental chemist, to make the necessary observations. The chemist may be able to analyse a piece of metal, and to ascertain with tolerable accuracy of what materials it is composed;* but he will give very little useful information as to its utility, unless he be assisted by the experience of the man who forges, and tempers, and sharpens the specimen, and thus exemplifies its peculiar properties.

That chemical changes are constantly going on in the vast and magnificent laboratory of nature, cannot, as I conceive, be denied. We must, however, bear in mind, that the chemistry of nature seems evidently designed to prepare materials for the chemistry of art to operate upon, and not to supercede the art itself.

The pile-shoes of London Bridge ought not to be cited as illustrative of a beneficial change by simply burying them in the earth. When those pile-shoes were forged, iron was a comparatively scarce metal. The small quantities of ore that were smelted in that day imply a careful and protracted process, evidently conducted under a variety of disadvantages as respects quantity, yet involving, perhaps, some of the most favorable conditions relative to quality.

The superiority of the straps that were in immediate contact with the charred surfaces of the piles, seems to indicate a process somewhat analogous to the cementation of iron in forming it into steel, by its combination with carbon. Yet, after all, may not this part of the shoe be that which had retained its original peculiarity, whilst that not in contact with the charred surfaces had become deteriorated by the soil in which it was imbedded?

It is to be feared that practical men, in the various departments of science to which they belong, are not sufficiently attentive to the phenomena that are constantly inviting their observation. Those of them who possess discernment enough to distinguish between things that differ, generally keep their own secrets. They are fully justified in doing so, whilst the present system of plundering and appropriating prevails in the scientific world. There is no very great encouragement for a poor man to communicate what he knows, merely to see others enriching themselves by the results of his unacknowledged, unappreciated, and unrewarded labors.

Your valuable correspondent "Junius" has said more of me than I deserve: were my means proportionate to my wishes, and I trust they are not immoderate, I should, perhaps, do more than I can at present. A young family, and a tolerably extensive business, justly demand of me the greater portion of my time and attention. A few moments of occasional leisure are all that I can spare to science; but those few moments always leave behind them a reward more satisfying and more enduring than either wealth or honor can confer.

I am, &c. J. O. N. Rutter.

April 30, 1833.

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* The chemist who can do this must be more expert than a "Lecturer on Chemistry," of whose performances in the analytical way I have lately heard an amusing account.

Birds and Insects.—There cannot be any question of the immense number of insects required by birds during the breeding season. It is stated by Bingley, that a pair of small American birds, conjectured to be the house-wren, were observed to leave the nest and return with insects from forty to sixty times in an hour, and that in one particular hour they carried food no fewer than seventy-one times. In this business they were engaged during the greatest part of the day. Allowing twelve hours to be thus occupied, a single pair of these birds would destroy at least six hundred insects in the course of one day, on the supposition that the two birds took only a single insect each time; but it is highly probable that they often took more.

Looking at the matter in this point of view, the destruction of insectivorous birds has in some cases been considered as productive of serious mischief. One striking instance we distinctly recollect, though we cannot at this moment turn to the book in which it is recorded. The numbers of the crows or rooks of North America were, in consequence of state rewards for their destruction, so much diminished, and the increase of insects so great, as to induce the state to announce a counter reward for the protection of the crows. Such rewards are common in America; and from a document given by Wilson, respecting a proposal made in Delaware "for banishing or destroying the crows," it appears that the money thus expended sometimes amounts to no inconsiderable sum. The document concludes by saying, "The sum of five hundred dollars being thus required, the committee beg leave to address the farmers and others of Newcastle county and elsewhere on the subject."

From its sometimes eating grain and other seeds, "the rook," says Selby, "has erroneously been viewed in the light of an enemy by most husbandmen; and in several districts attempts have been made either to banish it, or to extirpate the breed. But wherever this measure has been carried into effect, the most serious injury to the corn and other crops has invariably followed, from the unchecked devastations of the grub and caterpillar. As experience is the sure test of utility, a change of conduct has in consequence been partially adopted; and some farmers now find the encouragement of the breed of rooks to be greatly to their interest, in freeing their lands from the grub of the cockchafer, an insect very abundant in many of the southern counties. In Northumberland I have witnessed its usefulness in feeding on the larvæ of the insect commonly known by the name of Harry Longlegs, which is particularly destructive to the roots of grain and young clovers."

It has on similar grounds been contended, that the great number of birds caught by bird-catchers, particularly in the vicinity of London, has been productive of much injury to gardens and orchards. So serious has this evil appeared to some, that it has even been proposed to have an act of parliament prohibiting bird-catchers from exercising their art within twenty miles of the metropolis; and also prohibiting wild birds of any kind from being shot or otherwise caught or destroyed within this distance, under certain penalties. It is very clear, however, that such an act could never be carried; and though it *might* be advantageous to gardens, orchards, and farms, yet the attacks which the same birds make on fruit would probably be an equivalent counterbalance.

In the case of swallows, on the other hand it has been well remarked by an excellen naturalist, (the Rev. W. T. Bree,) that they are to us quite inoffensive, while "the beneficial services they perform for us, by clearing the air of innumerable insects, ought to render them sacred, and secure them from our molestation. Without their friendly aid the atmosphere we live in would scarcely be habitable by man; they feed entirely on insects, which, if not kept under by their means, would swarm and torment us like another Egyptian plague. The immense quantity of flies destroyed in a short space of time by one individual bird is scarcely to be credited by those who have not had actual experience of the fact." He goes on to illustrate this from a swift, which was shot. "It was in the breeding season when the young were hatched; at which time the parent birds, it is well known, are in the habit of making little excursions into the country to a considerable distance from their breeding places, for the purpose of collecting flies, which they bring home to their infant progeny. On picking up my hapless and ill-gotten prey, I observed a number of flies, some mutilated, others scarcely injured, crawling out of the bird's mouth; the throat and pouch seemed absolutely stuffed with them, and an incredible number was at length disgorged. I am sure I speak within compass when I state that there was a mass of flies, just caught by this single swift, larger than, when pressed close, could conveniently be contained in the bowl of an ordinary table-spoon."—[Library of Entertaining Knowledge.]

AGRICULTURE, &c.

Valuable Manure—New-Jersey Marl. By D. A. Ames. [For the New-York Farmer.]

Mr. Fleet,—I have, according to promise, collected a few facts upon the Jersey Marl, as a manure, and I submit them to you for insertion in the New-York Farmer.

Every person to whom I have applied for information upon this new and valuable article, speaks of it as possessing enriching qualities, truly surprising, and of more general value than any known substance at present in use for that purpose.

Its effect was accidentally brought into local notice about sixteen years ago, by a farmer, who, having a ditch dug in a meadow, had the soil scattered over the piece: the ditch or drain happened to cut a vein of this marl, and the produce of the meadow was three-fold the ensuing season, upon the spot where the marl was scattered. Important as this was, no further notice was taken of it, and being of the old stamp, averse to any thing new, he neglected to profit by his accidental good fortune. That meadow still has a better bottom where the marl was spread. After this I can find no traces of its use till about nine years since, when, by some chance, Mr. Alexander M'Gregor spread a quantity on some grass land; the effect was great, and he informed me that the first crop paid him for the expense in additional hay. That gentleman is now a warm advocate for it, and being a large owner, and a wealthy man, has caused it to be pretty extensively used for these last two years, for all kinds of crops, and he assured me last week, with entire success; yet one or two, who have pits of marl on their premises, still prefer disposing of it to improve other farms, rather than enrich their own. It is now ascertained that this marl forms a substratum in many parts of the Jersey coast, and therefore may be procured to any extent; and I am about to show you that its cheapness, durability, strength, cleanness, &c. will make it a valuable manure for the Long Island market-gardeners and farmers. If they once try it, they will no more buy the New-York manure at 50 cents the carman's load. I am assured by one respectable farmer, that he considers one load of marl equal to five of dung. It is perfectly clean, and will even destroy many weeds. This is a great desideratum in garden truck. It does not readily freeze, and will work well all weathers, always ready for use, and may be spread any time from September to March inclusive. It makes an excellent compost; upon grass land it does wonders; a thick bottom and heavy swarth of white clover is its certain produce. Potatoes, both the sweet and Irish, thrive well with it. Dung, it is known generally, flies into the tops of these, while marl scarcely alters the top, but greatly increases the size of the roots. Corn, buckwheat, cabbages, turnips, all succeed with it.

I am informed that five loads to the acre have produced a fine crop of buckwheat upon very poor land. It is used as a top dressing on grass land, and may be spread from 10 to 20 loads per acre, as late as March. One large farmer, Judge C., informed me he had used 18 loads per acre; but there is some danger of using too much, particularly with poor light land. I have heard of some that was unproductive for five years, but last year it began to recover, and it is expected the produce will eventually make up for lost time, but it is certainly better not to over-do the thing. Give a second dressing the second year rather than a surfeit at first. As far as experimental information enables us to determine, it continues its effects sufficiently nine or ten years. For corn and grain it is scattered on the top after ploughing, and well harrowed in. I cannot learn that it has been tried for peach trees, but I know one large grower who is making preparations to try it this season.

This marl is evidently a marine deposit: it is found in hollows at two or three feet below the surface, continuing downwards to sixteen. Its upper strata is of a greenish blue color, the middle more inclining to grey; and the lowest is of an ash color; this last is considered the strongest. Observe, I speak of its color when dry; and I ought further to observe that other pits are said to vary much in color and quality: therefore, before trial the quality ought to be known. This marl has the appearance of sand, each little grain having a thick coat of decomposed vegetable matter, making them adhere together in lumps occasionally.

Shells, sea-worn stones, sharks' teeth, &c. are often found amongst it. The marl that is found in some places further from the sea does not appear to be so powerful. From the pits where I selected you the sample, that accompany this, it is carted by land 40 miles, the farmer paying from 2s. 6d. to 3s. per load by the pit side. A load is twenty bushels; a bushel weighs from one hundred to one hundred and three pounds, when dry.

I am about having the marl analized, so as to ascertain exactly where it will be most useful. I will communicate to you the result with some other experiments, for your next number; and should you wish to possess a larger sample for any of your readers to make trial with, I have prepared you some in barrels, with the price you can furnish it; for I can see no reason why it should not become an article of as much request as ashes, or plaster of paris, and will, therefore, be of as much commercial importance as coal.

D. A. Ames.

New-York, Sept. 24, 1833.

On the Wine of Seckel Pears. By C. S. Rafinesque. [For the New-York Farmer and American Gardener's Magazine.]

This American Pear is the most delicious fruit of our country; it is different in flavor from any other pear or fruit. I prefer it to the pine-apple and any other fruit, except some kinds of grapes. It begins to be extensively cultivated, and this year it has appeared in abundance in the market of Philadelphia, at the price of 20 to 50 cents the half peck.

I had long ago wished to make experiments on its vinous properties, and I now have begun a series of them, of which I shall gradually communicate the results.

Mr. Brarier, of Philadelphia, had already published his experiments on its saccharine properties in the Journal of Pharmacy. He has shown that it is the only pear that affords a real syrup and sugar candy, equal to those of the sugar cane. And as sugar is the main principle of wine, I was induced to try my experiments.

The juice of the Seckel Pear weighs 1075, water being 1000, or 7½ per cent. more than water. This is more than many grape juices, which vary from 1040 to 1100. This juice is very sweet and pleasant, but thinner than good Must, or grape juice. The color is yellowish, with a tinge of reddish. One bushel of pears gives four gallons of juice. Therefore, if the wine or perry made with it may be of a superior flavor and quality, it may be worth $1 the gallon; thus a bushel of pears will produce $4; while the same quantity produces only one gallon of syrup worth 75 cents.

Mr. Brarier believes that when this useful tree becomes very plentifully multiplied, as it bids fair to be, since the nurserymen inform me that they sell more of it than of any other whatever, or than of all the other pears put together, and can hardly propagate it fast enough—when it will be as plenty as our cider apples, he thinks it may be made useful for the purpose of syrup and sugar. But how much more so for wine, or a superior perry!

The average of a full bearing tree is four bushels—one acre will hold easily 100 such trees. Thus one acre of orchard will produce at least 400 bushels, which, at $1 per bushel, $400 annual income, whether sold in market or made into syrup, which requires some care or trouble: while it will be $800 per acre for 1600 gallons of wine or perry, at 50 cents the gallon, or $1600 if it should sell at $1 the gallon, and with less trouble than the making of syrup or sugar, which is not so easily made as maple sugar.

I have an idea that by mixing the juice of Seckel Pears and wild grapes, an improved wine can be made. In fact the Seckel juice, by an addition of Must or grape juice, will acquire the tartaric acid, without which no wine can be had, as the malic acid of apples and pears makes only cider or perry. Some tartaric acid or argol might be added; but fortunately the grapes and Seckel Pears ripen at the same time, and thus by the mixture both the proper acid and mucilage of grapes may be procured for the vinous change.

My experiments will extend to this; and I shall use the poorest of our wild grapes, such as those called chicken grapes, so as to have the worst result. Well knowing afterwards that by using the better sort of our wild grapes, Isabella, Bland, Catawba, &c., a superior result may be attained.

If it should be needful to thicken the Seckel juice so as to have a richer must, it may easily be done by boiling, reducing four gallons to three. Thus a variety of wines may be produced by these pears.

But as I am still bent upon improving our native wines, I deem that the juice of Seckel Pears, added to our native grape juice, in the proportion of one-third or one-fourth, would improve many of our wines, by imparting to them the delicate flavor of the pear, and even adding to the strength of any must which is under 1075 in weight.

Our Seckel Pears last from September to October, in Pennsylvania, New-Jersey, and New-York, and there is yet time for many farmers to take the hint, and make experiments this very year. Let them communicate the results, as I will do mine, and we shall acquire thereby a stock of knowledge for next year. This is quite a new subject and branch of industry, since the very fruit is new and only lately spread. It is truly an American fruit, deserving our attention and care. We ought to multiply it speedily and properly, by grafting with it all our worthless pears and apples. C. S. Rafinesque.

Philadelphia, Sept. 15th, 1833.

Memorandums about the Pea Crop. By W. Prince & Sons. [For the New-York Farmer.]

May 22 and 23, 1833. Planted all the following kinds on good ground, without manure, in rows:

June 20. Observed blossoms on the Nimble Dick, and on the Early Single Frame.

23. Blossoms on Bishop's Dwarf, (English seed).

July 8. Early Single Frame and Nimble Dick have pods fit to pick. These kinds much resemble each other.

Early Cluster and Dwarf Prolific blossoming.

August 2. Housed Nimble Dick, and thrashed them out.

7. Pulled up Botany Bay purple podded peas.

8. Pulled up Bishop's Dwarf, and put them on the fences to dry fully; they having ripened unequally, it was unsafe to house them without more airing.

13. Thrashed out Bishop's Dwarf, Botany Bay, Early Single Frame, and Lady's Finger.

16. Thrashed out Sugar Peas, Matchless Marrow, and Bergen Peas.

19. Pulled up Blue Imperial, and New Grotto Marrow, and put them on the fences—not fit to thrash.

Pulled up Spanish Dwarf, Dwarf Prolific and Early Cluster.

It appears that the Nimble Dick and Early Single Frame are the earliest of the above, and they resemble each other very much, but are supposed different varieties. They are fit for the table from twelve to fourteen days sooner than Bishop's Dwarf, or any of the kinds I have planted, and yielded more than Bishop's in proportion as 16 to 13. The Nimble Dick had pods fit for the table in 46 days from the day of planting. I believe that by picking out the earliest pods, they might have realized the story of forty-day peas.

Of Knight's Marrow we sowed two parcels, on the same day, the one from France and the other from England, and although there was in appearance no perceptible difference, yet the crop from the French seed was *ten days sooner* than that from the English seed.

You will perceive by the above statement that Bishop's Dwarf and the Dwarf Spanish vary materially as to the periods of maturity, &c. In fact, when Bishop's Dwarf was fit for the table, the Spanish Dwarf had but just commenced expanding its blossoms. The reason that many have considered them as equally early is this: a great quantity of the peas sold last spring for the *former* were of the *latter* variety, and a number of instances in proof of this fact have fallen under our own observation. Wm. Prince & Sons.

Linnæan Botanic Garden, Flushing,
Sept. 30, 1833.

Salubrity of the Climate of Florida, and of Tropical Countries. By H. Perrine, M. D. [For the New-York Farmer.]

To the Editor of the Medical Journal of Sciences,
Philadelphia.

Dear Sir,—As the ship is still in the bay, I commence an additional sheet, to say that I have just read, in the May number of your Journal, your review of "Johnson on Change of Air"; and that I am highly delighted with your additions to his remarks on the climate of Italy. It is, indeed, a matter of momentous inquiry, to select the best winter retreat for our citizens, who are laboring under pulmonary disorder, and, I will add, under hepatic disease. However diversified the climate of our twenty-four existing states, the one great evil of a variable temperature is common to them all—sudden changes *cutting off* equally the corn of Maine and the cane of Louisiana, with the frosts of spring and of autumn; and *carrying off* the farmer of the north and the planter of the south, with consumption of the lungs and of the liver; and as the sufferer in either section but increases or exchanges disease in the other, he finally dies amid the great vicissitudes of the south of Europe, with the too tardy conviction, that the natural remedy of an equable temperature cannot be found in the miscalled *temperate*, but, properly, *variable* zones.. I myself exchanged incipient pulmonary disorder of the bank of the northern Raritan, for actual hepatic disease on the borders of the southern Mississippi; but, thank God, I have experienced relief for both on the tropical shores of Yucatan. While you admit the wonderful equability of temperature of the mis-named torrid zone, and its consequent remedial powers for the consumptive disorders of our citizens, you still appear to retain that common belief of the general insalubrity of tropical climates, which is founded on the reports and resorts of war and trade; but as you are already divested of false impressions in behalf of southern Europe, you will as easily overcome unmerited prejudices against tropical America. The local circumstances which render certain districts sickly during the *hot* weather *beyond* the tropics, will render similar districts unhealthy during the *warm* weather *between* the tropics; but for every extra-tropical situation, which you may show me exempt from malignant fevers during our autumnal months, I will show you an inter-tropical situation exempt from malignant fevers throughout the year! When remote from noisome marshes and chilling mountains, you will be equally free from febrile and inflammatory diseases in the uniform temperature of every location on the dry shores of a tropical sea. This whole peninsula of Yucatan is proverbial for the dryness and healthiness of its soil and atmosphere. In the city itself, from which I am writing—in this very house, whose balcony almost overtops the wall washed by the sea, I should be content to pass all my remaining days, if the state were placed under our happy government, and inhabited by our intelligent people. Indeed, so delightful is this climate, that a winter in Yucatan would remind you that we read not of frost in the garden of Eden; and might incline you to look with indulgence on the sublime idolatry of the Peruvians, in worshipping the truly material God of the World!

The desire to protract a tolerable existence amid the numerous natural blessings of such a climate, with the political and social enjoyments existing in our boundaries alone, induced me to ascertain that *it does indeed* extend beyond the astronomical line, *into our own* territory, and under our *own* government—whose manifold advantages can be duly appreciated only by our citizens abroad, or by foreigners, who happily compare it to the air which covers us, unseen, unfelt, but essential to our existence. In my address "To the Intelligent Friends of the Union," I therefore briefly mentioned the very peculiar circumstance presented in the singularly uniform temperature of southern Florida for vegetable growth and animal health; and I now challenge my professional brethren in general to name any place in the world, which, in climate and position, can combine as many natural and social advantages, for a dry winter retreat to our invalids, as Cape Florida.

Very respectfully, your obedient servant,
Henry Perrine.

Grass Cloth, &c.—*Mr. Fleet:* I observe in the advertisements of the New-York Courier and Enquirer, of August 16th, under public sales, the following: 66 cases assorted bleached and brown *grass cloth*, and *fine and extra grass cloth* handkerchiefs; 150 bales and cases *Chinchu*, *Bamboo*, and other fancy baskets; 40 cases Suchan *Pongees*, 20 do. Cochineal and white *Pongee* handkerchief; 60 dozen fancy *cane* seat chairs. Cannot you enlighten us in your next number relative to the vegetables which furnish these materials? H. P.

Florida Productions.—I presume you have observed that the Charleston Mercury remarks that "no doubt can longer exist that the productions of the West Indies may be profitably cultivated in the peninsula of Florida. The sloop Capital, arrived yesterday from near Cape Florida with a quantity of bananas, plantains, and limes, as a part of her cargo, being the first shipment for commercial purposes, of fruit, produced at that place. A bunch of the bananas, and of the plaintains, and a few of the limes, may be seen at this office, all remarkably fine." H. P.

Cape Florida Nursery.—I am told that the St. Helena will suddenly start to-morrow, at 9 A. M. I fear these dilatory Mexicans will not have the hives of stingless bees ready. I want also to send you, if possible, three young plants, viz.: a true *pulque* Agave, a true *Henequen* Agave, and a true Pita plant, Bromelia or Furcrœa, which you should have the greatest possible care taken of, as they give a death-blow to the veracity and intelligence of Humboldt. Should they go, exhibit them likewise at the American Institute, if they arrive in time. As I can keep my nursery under way, provided J. Dubose of Cape Florida is persevering, through Sagra at Havana; and as my fellow trustees in the T. P. Company seem to hold back for the law giving the township of land, I shall remain here till I have news of its passage. Perhaps I will have time to-night to write a short address to the Horticultural Society, which I wish you to present and explain. If they and their brethren throughout the Union would do any thing in their own way, to forward the enterprise, it would soon be completed.

H. PERRINE.

Sept. 16, midnight, 1833.

PITTING TURNIPS.—As the turnip harvest is approaching, we take the liberty of suggesting to those who cultivate the Swedes, our method for pitting them for winter. The pits are limited to two feet in width, and of an indefinite length, and are dug in a dry situation, seldom more than two feet deep. When the pit or hole is filled with roots as high as the surface of the ground, the turnips are laid by hand, the tops out, and sloping to the centre, until they terminate in a ridge which is generally about two feet above the ground. The whole are then covered with straw, and then with earth. The important point follows: The crown of the ridge is then pierced with an iron bar, at intervals of a yard, and the earth pressed out, so as to leave an entire aperture into the turnips, and into each of these apertures a wisp of twisted straw is loosely inserted. The roots will heat, and unless the rarified air is permitted to escape the turnips are apt to rot. The openings permit its escape, without danger of the frost doing injury. With this precaution we have not lost one bushel in a thousand. The same course would no doubt be beneficial in preserving the *mangel wurzel*. B.

MASSACHUSETTS SILK.—We observe that the Bristol County Agricultural Society have been awarded four premiums for white mulberry trees, two of which were given for those planted expressly for the making of silk on the same farms. The whole number of trees entered for the premiums was over 70,000.

CURING BUTTER.—We should suppose the following recipe recommends too great a proportion of saltpetre:

Take two parts of the best common salt, one part sugar, and one part of saltpetre, beat them up together, and blend the whole completely; take one ounce of this composition for every sixteen ounces of butter, work it well into a mass, and close it up for use.

The above by some is used in this proportion—ten ounces of salt to four ounces of clean sugar.

The following is the commendation given of this mode of practice in the Pennsylvania Farmer:

"The butter cured by this mixture appears of a marrow consistence and fine color, and never acquires hardness, nor tastes salt; it eats as sweet after being kept three years as at first. It must be noted that butter thus cured requires to stand three weeks or a month before it is fit to be used; if it be sooner opened, the salts are not perfectly blended with it, and sometimes the coolness of the nitre will be perceived, which totally disappears afterwards."

This mixture will not cost more than about one cent per ounce, which is sufficient for curing one pound of butter. Country farmers, is not this worthy of your attention? As much so as sweet butter is better and bears a higher price than that which is strong and frowy. Besides, it affords to the dairy woman a settled rule, in an operation which, in the way it is usually practised, is done without rule or uniformity. I cannot but think, were people to adopt the mode here recommended, they would soon be convinced of the importance of it. Every one knows the superiority of meat preserved by a proportion of saltpetre and sugar with common salt, and it cannot but be expected that the same should be the case in respect to butter.

SALT YOUR CORN.—Mr. Brown, of this vicinity, communicated some information to us, in a conversation recently held with him, in regard to the use of salt in corn which is put away in the husks, which may be interesting to the public. He stated that he received last year a quantity of corn, which he had purchased, in so wet a state that he was apprehensive that it would spoil. He remembered that it was a common practice in Pennsylvania, when hay was put away somewhat damp, or not fully cured, to sprinkle salt on it, and that such hay generally kept well, and that horses and cattle were very fond of it; he therefore concluded to try the experiment on his corn. He accordingly, as his corn was thrown in a pile on a large floor, sprinkled it with salt, using from a half a bushel to a bushel of salt to five or six hundred bushels of corn. The corn kept well, never became musty, and never had any weevil in it. Mr. B. still had of this corn when he communicated this information to us; and he stated that the bread which it then made was so sweet and good that it was esteemed preferable to that made of new corn. He also stated that he was not under the necessity of purchasing any fodder for his working oxen last winter, they fed upon the husks of this corn so freely; and he added that they kept in excellent order. Mr. B. was so well pleased with this experiment, that he is putting up all his corn this year in the same manner, using about half a bushel of salt to five hundred bushels of corn, which he thinks is enough.—[Ala. Intel.]

PRICE OF HOPS.—Hops vary much in price. Some years farmers and speculators are made "hopping" mad because they can get no price for them. This year, as appears below from the American Farmer, they are "hopping" for gladness.

The late increased demand for hops in New-York, and the high prices which the article commanded in consequence of the exportation of a large quantity to Europe, appears to have set our friends in the north "all hopping." Every northern agricultural paper that we open abounds in "hops, hops." It would seem from the following article, that one, at least, of these active gentry has hopped into a pretty round sum.

"*Hop Culture.*—The Bangor Courier mentions that one of the packets of that place, bound to New-York, recently took on board two hundred bales of No. 1 hops, raised in Penobscot. The value of this quantity was $8000, and the present prices of the article make the crop worth, on an average, $150 per acre. As the Maine soil and climate are suited to the culture, we see no reason why it should not be carried, in that as well as other sections, much farther than it has been. In Great Britain, about fifty thousand acres are occupied with hops."

Now this kind of business, at the rate of "$150 per acre," we would like very well to be at, if we only knew how. Has any of our subscribers ever cultivated the hop to any extent in this section of country, or farther south? and if so, cannot he or they tell us something about it? We should like to be "made sensible" of the practicability, prospects of success, and advantages of this culture, with the method of conducting it.

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 26th day of October to the 4th of November, 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Octob.26..	6 a. m.	48	29.76	w by s	moderate		clear
	10	52	29.80	..	fresh	..—w by s	.. —fair
	2 p. m.	54	29.77	..	..	w by s	fair
	6	52	29.82	w	moderate	w	.. —clear
	10	48	29.92		fresh		clear
" 27..	6 a. m.	45	29.95	wsw	light	sw—w	fair —hazy —cloudy
	10	50	29.91	..—ssw	.. — mod.	..	.. — ..
	2 p. m.	59	29.78	sw by s	fresh	..	cloudy
	6	54	29.79	..	moderate	..	..
	10	52	29.81	..	..	..	..
" 28..	6 a. m.	46	29.81	NW	faint	..	..
	10	50	29.81	WNW	..	..	fair
	2 p. m	53	29.79	w	moderate	w—w by s	..
	6	46	29.80	..	..	w by s	..
	10	44	29.82	..	..		..
" 29..	6 a. m.	37	29.97	NW	faint	WNW	clear
	10	44	30.00	..	moderate	..	fair snow at Richmond and at Ashtabula, twelve inches.
	2 p. m.	47	29.95	..	fresh	..	..
	6	42	29.98	..	..	..	..
	10	41	30.00		moderate	..	..
" 30..	6 a. m.	38	30.09	WNW	..	..	..
	10	40	30.15		fresh	..	..
	2 p. m.	42	30.20	w	..	..	..
	6	39	30.30	..	..	..	..
	10	36	30.39	..	..	..	..
" 31..	6 a. m.	32	30.48	..	..	NW by w	..
	10	37	30.48	..	..	..	..
	2 p. m.	41	30.48	..	..	..	..
	6	39	30.47	NNW	..		clear
	10	36	30.50	WNW			..
Novem.1..	6 a. m.	32	30.50	wsw	moderate		..
	10	40	30.40	s	..		..
	2 p. m.	49	30.30	ssw	..		..
	6	45	30.12	sw	..		..
	10	45	30.05	wsw	..		..
" 2..	6 a. m.	45	30.03	..	light	sw	fair —thin cirri
	10	47	30.02	WNW	..	..	..
	2 p. m.	50	29.02	..	..	w by N	..
	6	53	30.05	..	..	..	..
	10	48	30.10	NNW	..	..	..
" 3..	6 a. m.	43	30.20	..	..	..	..
	10	46	30.22	N	moderate	..	..
	2 p. m.	47	30.22	..	..		clear
	6	43	30.29	..	..		..
	10	36	30.30	NNW	..		..
" 4..	6 a. m.	30	30.38	..	..		..
	10	34	30.37	..	..		..
	2 p. m.	39	30.35	N	..		..
	6	37	30.37	..	fresh		..
	10	33	30.47	NE	..		..

Average temperature of the week ending Monday, October 28, 49°.63.
Do. do. do. do. November 4, 40°.94.

NEW-YORK AMERICAN.

NOVEMBER 9, 11, 12, 13, 14, 15—1833.

LITERARY NOTICES.

THE INFIRMITIES OF GENIUS, as evinced in the habits and peculiarities of Men of Genius, by R. R. MADDEN, Esq., author of Travels in Turkey. 2 vols. *Philadelphia:* CAREY, LEA & BLANCHARD.—There have appeared from time to time in our columns extracts from this work, which will, for those who recall them, serve to display its character, and the manner in which the design of the author is executed. We think well of both; and cannot but believe that for miscellaneous readers these volumes will have a great charm, while to the hard student the observations and examples with which they abound, of the wearing of the body by overtasking the mind, may be greatly useful, as a guide and a warning. Our clever countryman, Dr. Dekay, in his Sketches of Turkey, has taught us rather to distrust Mr. Madden as a traveller. Perhaps there is less room for errors of fact in the volumes before us, which are rather a collection of curious incidents and circumstances connected with the career of a few eminent men, such as Byron, Cowper, Scott, &c., with the reasonings and illustrations furnished by their pursuits and habits, of the influence upon life of literary avocations.

MECHANICS' MAGAZINE AND REGISTER OF INVENTIONS, &c. Vol. II. No. 10. *New York:* D. K. MINOR.—In addition to the usual and instructive variety furnished by this deserving periodical, we have in the present number a detailed statement of all the articles exhibited at the late Fair of the Institute in this city, and moreover, the address of Mr. Kennedy, at the Chatham street Chapel, before the Society of the Institute and a large assemblage of citizens. This address is certainly clever. It is as a whole an ornate and attractive declamation in favor of a protective Tariff, and against the system of free trade—claiming, which we confess surprised us not a little, that even Mr. Huskisson's doctrines, applied to this country, are the doctrines of the Tariff party! There is both ingenuity and talent in the general construction of the address, and in the selection of its topics; and it could not therefore fail to be highly acceptable to the Society before whom it was delivered. We cannot leave this Magazine without again saying that it seems to us to have a strong claim on the support of all the industrious classes connected with manufactures and the mechanic arts.

LIFE OF OLIVER CROMWELL; by the Rev. M. RUSSELL, L. L. D. 2 vols. New York: *J. & J. Harper.* Constituting Vol. LXIII and IV of the Family Library.—The life and career of Cromwell have been the theme of unmeasured censure, and equally unmeasured admiration, according to the political bias of the parties discussing them. Mr. Russell has endeavored to present an impartial view of both; and considering how difficult impartiality is, even for those in the habit of, and with the qualifications for, forming an opinion for themselves, he has succeeded pretty well. The leaning, if any, is against Cromwell, whom, in the sketch of him with which the history closes, and which we extract, he rather underrates, as we think, in the qualities of greatness.

The great art of attaining success, in all commotions excited by political or religious change, is founded on the knowledge of character, and on the talent of directing to a particular object the passions of the multitude, and the ambition of their more active leaders. By this mastery over the feelings and designs of his contemporaries, Cromwell, there is no doubt, acquired the means of accomplishing the most arduous parts of his undertaking. He thereby broke the power of Parliament, from whom he first derived his authority; wielded the mighty influence arising from religious sentiment; and, finally, induced the majority of a democratical government to accede to his desire of ascending the throne, as the avowed monarch of three kingdoms which he had in effect subdued.*

Of Cromwell it may be said that he was rather a remarkable man than a great one, and that the story of his life excites in the mind of the reader more of surprize than admiration. The elements of true greatness were deficient in his character: he wanted especially self-denial, sincerity and gratitude. He was even destitute of that sensibility, or delicacy of feeling, without which no man can attain the higher degrees of excellence. The mere circumstance, for example, trifling as it may appear, of his occupying at Whitehall one of the king's beds while his majesty was under the hands of his jailer in the Isle of Wight, argues a base spirit; and the disgust which arises from this contrast is not a little increased, when we are told, that while in the possession of the royal bedchamber, and even reclining on the couch, he gave audiences to the principal persons of the republican government.

It is indeed mortifying to human pride to reflect how mean and worthless, on many occasions, are the individuals who start up from obscure life to seize the loftiest and most commanding positions of society. In the case of Cromwell, however, we see qualities which were adapted exclusively to the period in which he lived, and which, at any other time, by being confined to a very limited range, could not have produced any deep or permanent impression on public affairs. His enthusiasm, and fanatical propensities would, at a more tranquil epoch, have spent themselves on local objects and domestic reformation. He might have figured at a county meeting or a Bible society, and under the mask of his natural dissimulation, have acquired a character for zeal, patriotism, and independence; but in a peaceful, settled period, such as that we have supposed, his abilities would not have enabled him to surmount the obstacles that attached to his condition in life, and to reach any marked distinction in civil or military pursuits.

In comparing what Cromwell actually accomplished with the means of which he was possessed, no writer has been more successful than Cowley; who, in the discourse already referred to, speaks of him in the following terms. "What can be more extraordinary, than a person of mean birth, no fortune, no eminent qualities of body, which have sometimes, or of mind, which have often, raised men to the highest dignities, should have the courage to attempt, and the happiness to succeed in, so improbable a design as the destruction of one of the most ancient and solidly founded monarchies upon earth; that he should have the power or boldness to put his prince and master to an open and infamous death; to banish that numerous and strongly-allied family, to do all this under the name and wages of a parliament; to trample upon upon them, too, as he pleased, and spurn them out of doors when he grew weary of them; to raise up a new and unheard of monster out of their ashes; to stifle that in the very infancy, and to set himself up above all things that ever were called sovereign in England; to oppress all his enemies by arms, and all his friends afterwards by artifice; to serve all parties patiently for awhile, and to command them victoriously at last; to overrun each corner of the three nations, and overcome with equal facility both the riches of the south and the poverty of the north; to be pleased and courted by all foreign princes, and adopted a brother to the gods of the earth; to call together parliaments with a word of his pen, and scatter them again with the breath of his mouth; to be humbly and daily petitioned that he would please to be hired at the rate of two millions a year to be the master of those that hired him before to be their servant; to have the estates and lives of three kingdoms as much at his disposal as was the little inheritance of his father, and to be as noble and liberal in the spending of them; and, lastly (for there is no end to all the particulars of his glory), to bequeath all these with one word to his posterity; to die with peace at home and triumph abroad; to be buried among kings, and with more than regal solemnity; and to leave a name behind him not to be extinguished but with the whole world, which, as it is not too little for his praises, so might have been too for his conquests, if the short line of his human life could have been stretched out to the extent of his immortal designs?"†

The life of Cromwell may be studied with special advantage in our country, as showing the gradual and crafty, but sure devices which have so often led, and which will again, in spite of history and experience, often lead popular masses, contending, as they believe, for freedom, into the clutches of those, who, with fair seeming, and loud professions in the cause of liberty, aim only at the possession of office and power.

ILLUSTRATIONS OF POLITICAL ECONOMY, No. XIX. Berkley the Banker; Part I, No. —: Our Parish. By *Harriet Martineau.* Stereotype edition. *Boston, L. C. Bowles; New York, C.S. Francis.*

These two little volumes—we hope all Miss Martineau's illustrations may be in like manner stereotyped and widely circulated in our country—though adapted to the peculiar state of society in England, especially in respect of its poor laws and banking system, are yet so sensible, so clear, so natural, and withal so attractive as mere stories, that we soon lose the impression that they lack that immediate application here which they must find in every town and village of England. From Berkley the Banker we make a single extract. It is the letter of the daughter of the banker, written to her mother on hearing of the failure of the father's bank—a failure by which that family would be reduced from wealth to self-dependence. It will make our readers anxious, we are sure, as we are, to see in the sequel of the tale how this family is borne through its reverse of fortune.

"Dearest Mother,—The news which Horace has brought grieves me very much. My great trouble is that I am afraid Fanny and I know too little at present what will be the extent of such a trial to feel for my father and you as we ought. We are aware, however, that it must be very great and long-continued to one who, like my father, has toiled through a life-time to obtain the very reverse of the lot which is now appointed to him. There is no dishonor, however, and that, I think, is the only calamity which we should find it very difficult to bear. Your children will feel it no misfortune to be impelled to the new and more responsible kind of exertion of which their father has kindly given them frequent warning; and for which you have so directed their education as to prepare them. Fanny and I are too well convinced that the greatest happiness is to be found in strenuous exertion on a lofty principle, to repine at any event which makes such exertion necessary, or to dread the discipline which must, I suppose, accompany it. I speak for Fanny in her absence as for myself, because I have learned from her to feel as I do, and am sure that I may answer for her; and I have written so much about ourselves, because I believe my father in what he has so often said,—that it is for our sakes that he is anxious about his wordly concerns. I assure you we shall be anxious only for him and you and Horace. Horace, however, can never be long depressed by circumstances; nor do I think that any of us can. I mean to say this in the spirit of faith, not of presumption. If it is presumption, it will certainly be humbled: if it is faith, it will, I trust, be justified. In either case, welcome the test!

"I expect Fanny home by the middle of the day to-morrow; and I hope we shall see you in the evening, or the next day at farthest. My father may rely on perfect freedom from disturbance. I shall provide that nobody shall come farther than the white gate, unless he wishes it. I send you some grapes, and my father's cloth shoes, which I think he must want if he has to sit still much at his writing. I shall send you more fruit to-morrow; and the messenger will wait for any directions you may have to give, and for the line which I am sure you will write, if you should not be coming home in the evening.

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* "I have often observed, with all submission and resignation of spirit to the inscrutable mysteries of Eternal Providence, that when the fulness and maturity of time is come that produces the greatest confusions and changes in the world, it usually pleases God to make it appear, by the manner of them, that they are not the effects of human force and policy, but of the divine justice and predestination; and though we see a man like that which we call a Jack of the clock-house, striking as it were the hour of that fullness of time, yet our reason must needs be convinced that the hand is moved by some secret, and, to us who stand without, invisible direction. And the stream of the current is then so violent, that the strongest men in the world cannot draw up against it, and none are so weak but they may sail down with it. These are the spring-tides of public affairs, which we see often happen, but seek in vain to discover any certain causes."—[Cowley's Essay on the Government of Oliver Cromwell.]

† Cowley's Discourse on the Government of Oliver Cromwell.

"Lewis, who has been a very good and pleasant companion, sends his love, and his sorrow that anything has arisen to make you unhappy.

"Farewell, my dear father and mother. May God support you, and bring blessings out of the misfortune with which He has seen fit to visit you! With His permission, your children shall make you happy yet.—Your dutiful and affectionate daughter,

"MELEA BERKELEY.

"P. S.—No one has been so anxious about you as Henry Craig. If he thought it would be any comfort to you to see him, he would go over to D—— on the instant. He said so when we were only in fear. I am sure he will now be more earnest still. As soon as Horace is gone, I shall write, as he desires, to Reading, and Manchester, and Richmond. If there are any more, let me know to-morrow. I hope you will not exert yourself to write to anybody at present, except Fanny or me."

POPULAR ESSAYS ON NAVAL SUBJECTS; by the Author of 'A Year in Spain.' New York: GEO. DEARBORN.—These Essays, dedicated most appropriately to the junior officers of the Navy, by one who is himself an ornament to that service, appeared originally, though not, as at present, connectedly, in the *Encyclopædia Americana.* In their present condensed form, they furnish information useful to the young officer, and valuable to all, in a style easy and polished, and, at the same time, unambitious.

The extract we subjoin, on the origin of the art of navigation, will witness for us how well the volume deserves our praise:

Horace has well said, that his heart must needs have been bound with oak and triple brass, who first committed his frail bark to the tempestuous sea. Nothing, indeed, conveys a higher idea of human daring than the boldness with which man rushes forth to encounter the elements; nothing speaks louder in praise of human ingenuity than that wonderful art by which he is enabled to forsake the land, stretching forth until it fades from the horizon, and nothing visible remains but the hollow heavens above, and a trackless waste below; driven from his course by adverse winds, yet, by dint of perseverance, wearying out the elements; and at length arriving, with unerring certainty, at the haven where he would be. And if the daring and ingenuity of the navigator deserve our admiration, the result of his efforts will not appear unworthy of the means. It is to the exercise of his wonderful art, that we are indebted for the improvement of our condition, which arises from the exchange of the superfluity of one country for that of another, the whole world being penetrated, and every clime made tributary to every other, until the whole globe is reduced to one common country. Above all, to navigation are we indebted for that higher and nobler advantage,—the interchange of sense and sentiment, which makes wisdom common to the world, and urges man onward to perfection.

Yet it has not always been so. Time was when the canoe, or the raft, constituted the only ship of the sailor, and when the narrow precincts of a lake or river set bounds to his roving disposition, and confined him within view of familiar objects. Advancing a step farther, we find him venturing from headland to headland, or from island to island, with a view of gratifying his curiosity, or bettering his condition, until a gale, driving him to some unknown coast, increases at once his knowledge and hardihood. Meantime, his bark adapts itself to nobler functions, enlarges its size, and improves in form; the rudder is added, the mast is better sustained, and the sails receive a more favorable application. And thus the art by which the ship is made, and that by which it is conducted, advance with equal steps. Deprived of the aid of surrounding objects, the land withdrawn from view, and nothing within the verge of the horizon but a waste of trackless water, the mariner casts his eye in despair to the overhanging heavens. Aid is granted to his prayers: the constellations assist him in his course: among many revolving stars, he finds one steadfast, and makes it his perpetual guide. Such do we find the actual state of navigation among the savage tribes of our own day; and such was also the progress of the art among the earliest nations that improved it. Not the least of the improvements which we have made in this art, is that simplification in practice, by which it is rendered available with little study and capacity.

Anomalous as it may seem, yet it is true that more study, more experience, and laboriously acquired information, were necessary to form an Acestes, or a Palinurun, than are now required to furnish forth a La Perouse or a Parry. The master, or pilot, of ancient times, who had the command of the sailors, and directed all the evolutions, was not merely required to know whatever related to the management of the sails, the oars, and the rudder: he was to be familiar with all the ports that lay in the track of his navigation, the landmarks by which they were designated, and all the rocks, quicksands and dangers of the intervening deep: he was to know the course of the winds and the indications that preceded them; also the movements of the celestial bodies, not merely for the purpose of directing his course by them, but to understand the winds and weather, which some of them, as Arcturus and the Dog star, were believed to portend. Moreover, he had to be skilled in reading the various omens, which were gathered from the sighing of the wind in the trees, the murmurs of the waters, and their dash upon the shore; the flight of birds, and the gambols of fishes. A voyage was, in those days, a momentous and awful undertaking. When the time arrived for the sailing of a ship or fleet, the masts were raised, the sails bent, and all made ready with solemnity, and great parade of preparation. If, as was most usual, the ships were hauled up on shore, the mariners placed their shoulders at the stern of the ships, and, at the word of command, pushed their bows forward into the sea, leaping aboard when they floated. Levers were used to move the heavier vessels, and in later times, the helix (probably jack-screw.) which Archimedes had invented for that purpose. Before putting to sea, the Gods were ever solemnly invoked and propitiated by numerous sacrifices; thus we find all Homer's heroes sacrificing to the gods before they undertake a voyage; and Virgil's Anchises ventures forth only after having devoted a bull to Neptune and a bull to Apollo.

Nor did the voyagers alone supplicate protection: the crowds of friends and countrymen, who thronged the shore, joined fervently in prayers for their deliverance from danger, and like the Venusian poet, commended their departing friends to the presiding deities of the winds and waves. All omens were carefully regarded; the entrails of the sacrifices examined, with every possible prognostic of good or evil; and a very small matter, the porching of swallows on the ships, or an accidental sneeze to the left, was enough to delay departure. As this, however, never took place without the most favorable auspices, it was always joyful. The ships were adorned with streamers and garlands of flowers; and, when the signal was given from the admiral ship, by sound of trumpet, a shout of rejoicing rang through the fleet, sent back by the responding blessings of the friends that remained. After advancing a short space, doves, which the mariners had brought from their homes, were released, and their safe arrival—not unfrequently charged with the last adieu of a departing lover—was considered auspicious of the return of the fleet. The admiral led the van, conspicuous by his painted sails and streamers, and opened a path in which many followed. In moderate weather, the ships often sailed side by side; but, as the wind freshened, and the sea grew rough, the order became more open, to avoid contact. At all times, they kept close to the land, following the indentations of the coast. When night approached, it was customary to anchor, or else to beach the vessels, that the crews might repose, each rower sleeping on his bench, ready to renew his labors with the returning sun. If the amenity of the weather, the friendly aid of the moon, or the open nature of the navigation, admitted of sailing during the night, the plummet or the sounding-pole directed their course, or it was shaped, as by day, from headland to headland. If the land were not visible, the known direction of the wind continued, with the aid of the stars, to guide them. Cynosura was the favorite of the Phœnicians: the Greeks abandoned themselves to the direction of Helice.

Having escaped the multiplied dangers of such a navigation, and having accomplished their object, the ships returned home with songs and rejoicings. If they were to be stranded, the sterns were turned towards the shore, and the vessels forced backwards upon it with the oars, until the crew landing, drew them beyond the reach of the surf. Sometimes they were taken into the beautiful moles, or artificial harbors, which the ancients constructed, with great labor and ingenuity, within the natural ones. These were in the shape of crab's claws, or horns, the ends, which formed the entrance, so overlapping as to exclude the swell of the sea. Castles defended their approach, and a light-tower, placed at the entrance, guided those who sailed along the coast, or desired to enter by night. It was called Pharos, from the island at the mouth of the Nile, where the first tower had been erected. Here the vessels were not hauled up, but simply fastened to the rings, or pillars, provided for the purpose, while at the inner ports were docks and stores for building and repairing. In this port, too, were temples devoted to the Gods, and especially to the patron of the place, where propitiatory sacrifices were made, and vows fulfilled and recorded: here, too, were numerous taverns, and places of more licentious gratification. Whether, however, they stranded their vessels on the beach, or moored them in the harbor, the mariners, before repairing to these resorts, fulfilled the vows made before departure, or in seasons of peril, offered thanks to Neptune, and sacrifices to Jupiter, for having granted them release from the durance of their ships. Upon those who had escaped shipwreck, gratitude was more deeply incumbent. In addition to other sacrifices proportioned to their means, they usually offered the garment in which they were saved, together with a picture descriptive of the disaster. If nothing else remained to them, the hair was shorn from the head, and consecrated to the tutelar deity; hence offering the hair was the last vow of the distressed mariner.

There is much that is beautiful in these simple acts of piety; but, except in some Catholic countries of the Mediterranean, where pictures of rescue and garments are still hung before the shrine of an invoked intercessor, and where processions are still made, after escape from shipwreck, none of these touching customs now remain. What can be more beautiful than the grateful sense of divine interference with which Columbus and his followers hasten to return their vows after their safe return to Palos? Such piety, if it availed not to avert present danger, at least served to inspire confidence to meet it; and, when past, the gratitude which it occasioned must have tended to refine the sentiments and ennoble the heart.

SKETCHES AND ECCENTRICITIES OF COLONEL DAVID CROCKETT OF WEST TENNESSEE; N. York, J. & J. Harper.—We hardly know whether this is a burlesque or real history of a man quite remarkable in our annals, and in some sort the type of a race, which steamboats and the rapid extension of civilization in the far West are fast extinguishing. It is in this sense a curious book, which we have read, we confess, with some interest and much incredulity.

SCOTT'S WORKS.—Four numbers more of Conner & Cooke's cheap edition are before us. They contain the Talisman, Woodstock, the Highland Widow, the Chronicles of the Cannongate, and Anne of Gierstein.

THE NATIONAL PORTRAIT GALLERY, Part VII; by *Jas. Herring* of New York, and *Jas. B. Longacre* of Philad.—This number furnishes the portraits and biographies of *Daniel Webster, Bishop White* and *Chief Justice Shippen* of Philadelphia. The first and the last portraits are good—of Bishop White we have seen a better. The memoirs are brief and well written.

We conclude, as usual, and as we hope now regularly to do, with No. 3 of our correspondent H.

Harrisburgh, Pa. Oct. 22.

I write to you from the banks of the Susquehannah. A dull steady rain prevails out of doors, and after wading through the mud about the purlieus of this place for an hour, I am glad to be housed at last for the rest of the day. I see the capital of Pennsylvania under every disadvantage, but still am pleased with it. Although a city in miniature (and this contains only four or five thousand inhabitants) is generally odious to one who has resided in a metropolis—reminding him perhaps of Goose Gibbie in jack-boots, at the Review of Tullietudlem—there is much in the appearance of Harrisburgh to reconcile the most captious to its assumption of civic honours. The manner in which the place is laid out and built, the substantial improvements going forward, and the degree of wealth and enterprize manifested in those already made, and above all, its beautiful scite, make it an exception to the generally uninteresting character of country towns.

The chief part of the town lies on a piece of Champagne land about 41 feet above the level of the Susquehannah; the handsomest street in the place, though occupied chiefly by petty tradesmen and mechanics, verging on the waters of that lovely stream. The other streets run at right angles to, and parallel with, the river which is nearly straight, when it washes the town with a graceful bend near the suburbs of either end. Facing the Susquehannah at the upper part of the town, and only a few hundred yards from the river, is a sudden elevation rising into a level platform about 60 feet above the surrounding plain. Upon this eminence, fronting the river through a broad street, stands the Capitol and State buildings containing the chief public offices. The centre edifice and one standing detached on either side, are all ornamented with Grecian porticos, and their size, their simple design and just architectural proportions, would make an imposing display and impress a stranger favourably until he ascertained the paltry material of which they are built. But I defy any one, unless he may have written sonnets to Time in the ruins of Babel, to have one respectful association with a structure of *brick*. Putting the perishable nature of the material entirely out of the question, though a sufficient objection to its use in a public building, its size alone is fatal to effect in a structure of any pretension. For it is massiveness in the details as well as in combination, which impresses the beholder in architectural form: and the pyramids of Egypt themselves if reared of boyish marbles, though they might be so ingeniously put together as to awaken curiosity, could never inspire awe. The disciple of Malthus perhaps might busy himself in calculating how many urchins it took—supposing every one in the dominions of Cheops capable of bearing marbles to have contributed his mite to complete the fabric—but where would have been all those ingenious surmises with which antiquarians, since the days of old Herodotus, and who knows how many centuries before, have puzzled the brains of their readers—where would be that reverence with which mankind in every known age have regarded these monuments of the power of their race in the early vigor of its creation—where would be the awe with which we now regard these artificial mountains that rear their stupendous forms in proportions that mock at modern art; and, rivalling in their heaped up rocky masses the masonry of Nature herself, speak of the labours of a race for whom the Mastodon of our own continent would have been a fitting beast of burthen?

What a singular perversion of taste is that existing in the towns and villages through which I am passing, which induces the inhabitants to make their barns and cow-sheds of solid stone, and their ornamental buildings of brick and stucco. I sometimes see Gothic churches of the first and Grecian fronts of the last; and these not unfrequently planted in the midst of a cluster of gray mansions whose towering gables, huge stone buttresses and deep cut narrow windows, make the former show like some pert poplar thrusting his dandy figure among a clump of hoary oaks. Still one cannot but admire the air of comfort—I might almost say of opulence—which prevails throughout the country I am passing over. This, in the village of Reading, through which we passed yesterday, is particularly the case. It has a population of about 7000 inhabitants; and the numerous stages filled with passengers which pass daily through it, the wagons loaded with produce that throng the streets of the place, and the rich display of goods and fancy articles in the shops give Reading a most flourishing appearance. It is prettily situated on the Schuylkill, with a range of high rocky hills in the rear; but its position wants the picturesque beauty of Harrisburgh. Here the Susquehannah is, I should think, full half a mile wide. It is studded with wooded islets, and flows between banks which, though not very bold in themselves, yet rise with sufficient dignity from the margin, and blend with the undulating country, until its arable slopes and sunny orchards are bounded by a distant range of mountains.

The prospect from the Capitol is, I am told, uncommonly fine; but the thick mist which limited my view to a very narrow compass while walking along the banks of the river an hour ago, has hitherto prevented me from trying the view. I shall visit the spot from which it is to be had in the morning.

Yesterday I had, for the first time, the gratification of hearing a sermon pronounced in German—the common language of this part of the country. I walked some distance through a pelting shower to the Church, in Wornelsdorf, and though the preacher was prevented by sudden indisposition from giving more than the exordium of his discourse, I was sufficiently delighted with his clear mellow enunciation, and the noble sound and volume of the language which he spoke in all its purity, to regret most deeply an often deferred resolution of mastering that manly tongue. One must think more strongly in such a muscular language. I have frequently had occasion to admire the expressiveness of the German in poetry when Goethe or Schiller were quoted by others, but I had not till now a conception of the effect in oratory of that language which gave energy to the torrent of Luther's denunciations, and richness to the flow of Melancthon's eloquence. I listened, it is true, not understandingly, but like one who admires the compass of an instrument though ignorant of the air that is produced from it. I conceived however that I could follow the preacher in his preliminary address; and indeed the tone of fervid feeling and unaffected solemnity in which it was made would have impressed, if it did not bear along, the most ignorant listener. The congregation, owing to the weather, was but small. The two sexes sat apart from each other and had a separate entrance to the building. I was not aware of this at my entrance, and as a matter of good taste took my seat among the ladies, when an active master of ceremonies, probably the sexton, insisted upon showing me to another place, and after a while induced me to change my situation, after having once or twice declined with thanks what I conceived to be an officious act of politeness on his part. The young *Vrouwties* appeared to regard our interchange of civilities with particular interest, and I am half persuaded that had I not struck my flag to the gentleman-usher just when I did, the womankind (as Jonathan Oldbuck presumes to call the suzeraines of the lords of creation) would have risen to a man (Hibernicé) in my favor and insisted upon keeping me among them.

I shall keep open this letter till to-morrow evening and add every thing I have to say on this side of the Alleghanies—For the present, good night.

October 23.—The rain still continued when I left Harrisburg this morning, and the view I promised myself from the Capitol was not to be had. My disappointment at not having seen more of the Susquehannah is not slight, and the feeling is enhanced by a delicious glance I caught of its waters in the sunlight as the clouds parted for a moment just as a turning of the road shut out the view behind us. I almost grew melancholy, while recalling with a sort of home feeling the delight with which, years ago, I first beheld its sources, to remember now that it was the last stream that ran eastward I should see for a long time to come. And then those calm, gentle waters, which flow as smoothly as the verse of him who has immortalized them, once seen are never to be forgotten nor passed again without interest. The Susquehannah has its birth in one of the loveliest of lakes, and it bears with it the impress of its parentage wheresoever it wanders—the bright green surface and transparent depths below, the winding current which, unbroken by cascade or rapids, whether it steals through the rich fields and beautiful glens of Otsego, or smiles on the storied vale of Wyoming, loiters alike beside its fertile banks, as if reluctant to pass them on its long journey to the ocean. For grandeur of scenery, indeed, the Hudson far surpasses it; and where is the stream that can match that lordly river! But there is a gentle beauty about the Susquehannah which touches without striking, and wins while you are unawed. The one, like a fair face lit up with glorious intellect, commands and exacts your homage; with the other, as with features softened with tenderness, you leave your heart as an offering.

We are now, you will observe, on the main road from Philadelphia to Pittsburgh, and as our stopping places, instead of being in those mongrel establishments, half inn, half farm-house, will probably be at the stage offices along the route, but little opportunity will offer for observing the manners of the residents. Thus far I cannot speak too warmly of the civility and kindness of the people among whom I have passed the last week; with the exception of the amusing little incident detailed in my first letter, not a circumstance has occurred to qualify this opinion. The general appearance of the country east of the mountains, you have already gathered from the two previous letters. Latterly we have ridden so continually in the rain, that I have had no opportunity of seeing it to advantage. But the only change I observe in the face of the country is that, instead of being broken up into small hills, where forest and cultivation are most happily mingled—as around Bethlehem—here the vales spread out into plains, and the high grounds receding, swell off till they show like mountains in the distance. I miss too those fine barns upon which I have dwelt with so much pleasure, nor do the better fencing and spruce looking dwelling-houses compensate for the loss of the imposing appearance of such huge granaries in an agricultural country. I thought when first observing the change and marking the herds of cattle and droves of sheep that sometimes throng the roads, that we had got at last completely into a grazing region. But the delicious wheat bread met with at the humblest inns with the little stock to be seen in the fields, seems to indicate that such is not the case. It seems odd in a country so thickly settled, where one meets a hamlet at every two or three miles, with scattering houses at frequent intervals between them, that wild animals should be yet abundant. But I was told at Bethlehem that it was not uncommon to kill bears upon the neighbouring hills; and a gentleman informed me this morning that they frequently drove deer into the Susquehannah within a few miles of Harrisburgh. I can account for it only by the fine forests which are every where left standing isolated in the midst of cultivated tracts, making so many links in the chain of woodland from mountain to mountain across the country, and tempting the wild animals, while it extends their range, to venture near to the settlements. In New-York you may be aware that owing to the wholesale manner in which clearings are made, the deer are swept off with the forests that sheltered them, and retreating into the mountain fastnesses of the northern counties, or the rude wilds of the southern tier, are there crowded so thickly as to be butchered for their skins. In the former region, while fishing, within a few weeks since, among the picturesque lakes which there stud the surface of the country, I have seen the deer grazing like tamed cattle on the banks. It was a beautiful sight to behold a noble buck calmly raising his head as the skiff from which we trolled approached the margin, and then, after standing a moment at gaze, toss his antlers high in air and with a snort of defiance bound into the forest.

Farewell. You shall hear from me again so soon as we pass the Alleghanies, the first purple ridge of which I can already see limning the sky in the distance. In the meantime I will note down anything of interest which catches my eye, and endeavour to give you hereafter some idea of the lofty landmark which, before you read this, will be placed betweeen us. H.

FOREIGN INTELLIGENCE.

Later from Europe.—The packet ship Virginia, Harris, from Liverpool, brings us London papers to the 7th ult.

From Portugal, the news is not so late as we have direct by the way of St. Ubes and Boston. There are some details supplied, however, which, if true, may be deemed important to the cause of the Queen. No new attack on Lisbon had been made, but the defeat of that of the 14th, on a particular point of the lines of defence, is magnified by the Pedroites into something so important, as, with other causes, to have led to the resignation of Marshal Bourmont and the French officers who accompany him. It will be seen that the fact of this resignation is strongly averred in the extracts we subjoin, but there may yet be error in it. If it *be* true, it must, we apprehend, have a decisive influence against Miguel.

It is however to be borne in mind, that as yet on manifestations have appeared in the interior of Portugal, friendly to Don Pedro and his daughter, whose armies only possess Oporto and Lisbon, and a narrow strip on the seaboard. Although, therefore, the forces of Don Miguel may discontinue their attacks on Lisbon, it does not seem to follow that the war will be speedily concluded. If, indeed, the attempt which Don Carlos will undoubtedly make to gain for himself the crown of Spain, be at all successful, his cause and that of Miguel will unavoidaly become united, and together may draw all Europe into the vortex of the family quarrels of the Peninsula.

Donna Maria arrived in her capital on the 23d of September, and was, as of course on all such occasions, received with every demonstration of joy and attachment, such being a regular part of the performance, let who may be the object.

The death of the King of Spain is also reasserted, and with a probability, greater than heretofore, of its truth. The Queen Regent is said to have assumed the reins of Government, without making any change in the old Ministry. Don Carlos, if he hopes to reassert his claims to the crown, must strike soon.

The speculations on the late meeting of the sovereigns of Russia and Austria, seem now to have resolved themselves into the conclusion, that a Congress of Ministers is agreed to be held in Vienna during the winter, in which the state of Germany, particularly as to the freedom of the Press, is to be discussed and proper bonds are to be contrived against too much liberty of discussion.

The Cotton Market at Liverpool had revived, and prices are quoted at a *half penny* advance on the lowest previous prices.

[*From the Liverpool Albion of the 7th.*]

Foreign.—The Conference of Munchengratz is really over. The Journals are nearly silent respecting its objects and its cause, and, perhaps, for the best of reasons, that there was, in fact, nothing important belonging to its determinations. The daughter of Prince Polignac is dead. She had frequently implored permission for her father to pay her a last visit, well guarded, and on giving his parole d'honneur, but it was refused! The Archduches Maria Louisa has ceded to Madame Letitia, the mother of Napoleon, the whole of the property of the late Duke de Reichstadt including the legicies left him by his illustrious father. Madame Letitia has since executed a formal act, granting the arms of Napoleon to the Museum of France, and the fortune of her grandson to the French hospitals.

Letters from Tampico to Oct. 9th, were received yesterday, via. New Orleans. The *conducta*, from Zacatecas, was expected to arrive in a day or two. The Rob Roy would be despatched for this port immediately after the arrival of the conducta.

The last account from the seat of war, stated that St. Anna had then a force of 10,000 men, which was amply sufficient to overcome his opponents, Arista and Duran.

SUMMARY.

[*From the Daily Advertiser.*]

A singular phenomenon was exhibited in the heavens, on Wednesday morning, which excited the admiration of all who witnessed its extraordinary appearance, and is well worthy the investigation of scientific enquirers. About 4 o'clock in the morning a large meteoric body, resembling a globe of fire, exploded in the zenith of the heavens, and poured a continuous stream of flaming particles on the sky beneath. The increasing scintillations from this luminous globular body were showered down like drops of falling rain, illuminatng the whole visible horizon, and scattering rich rays of light on each airy path as they fell. After this meteoric shower of fiery rain had some time descended, a luminous serpentine figure was formed in the sky, which, on its explosion, produced a shower of fire equally brilliant and incessant. The inflammable particles then apparently cohering in one ignited mass, rolled up in a ball to the zenith; and from this lofty elevation burst, and shot out streams of electric fire from its lumious orb, which continued to fall until the hour of six in the morning, when the dawning day put an end to their glory and their flight. The cause of this splendid and unique appearance of the heavens, and the magnificent phenomenon, with which we have been visited, is left to the wise to interpret. From them we invite a solution of this wonderful visitation.

Rumors and Commotions.—Our city to-day is full of strange rumors, concerning a phenomenon in the heavens, observed about five o'clock this morning. It is related by certain milk-men and market people, who were up and stirring at that early hour, that several stars were observed to leave their stations in the space above, and fall to the earth, scattering their brilliancy in a thousand particles of light and heat. Some allege that strange noises were heard, and others that meteors and comets sailed through the air in majesty and splendor unexampled. A piece of falling star is said to have been picked up, in the neighborhood of the city, by a milk girl, wearing a green calash, which was about the size of a *piece of chalk*.

We note these matters on hearsay evidence, not having risen this morning until fifteen minutes after the strange phenomenon was observed.—[Phila. Gaz. 13th inst.]

The Marco Bozzaris.—The steamboat Marco Bozzaris, Capt. Sutton, which left this port on the 15th Oct., bound to Buenos Ayres, to ply as a packet between that port and Montevideo, put into Bermuda on the 28th, to repair damage, having sprung aleak. She struck on the rocks at the "West End" on the night of the 25th, but did not sustain much injury. A letter from a correspondent at Bermuda dated Nov. 1st, says, "The Marco Bozzaris is now *beached*, to undergo repairs. It is feared that this cannot be effectually accomplished without taking out all her machinery. The schr ——, from Baltimore, arrived last evening in six days. The Ver., non, bearing the flag of Vice-Admiral Cockburn, is just arrived from Halifax."—[Jour. of Com.]

Water.—The report of the Engineer who was appointed to examine the best route for supplying this city with pure and wholesome water, was presented last Monday in the Board of Aldermen, and ordered to be printed. It is voluminous and accompanied by many plans and maps of the ground between this and the Croton river, the only unfailing source, whence a sure and adequate supply can be drawn. In a matter of this primary importance and magnitude, we hope the decision will be taken at once to do whatever is undertaken upon a scale adequate to the wants and means, present and prospective, of this great city. There will be no economy, and certainly no credit, for the sake of diminishing present expenditure, in adopting temporary expedients. Let the work be done for posterity, as well as for the existing generation; and posterity will not then have reason to complain of being burdened with a portion of the expense its proper execution may require.

The Rail Road Accident.—The particulars of the dreadful accident near Hightstown, as given in the papers, were in the main correct. We have since been informed, that Mr. Lex, of Lebanon, Pa., who was so shockingly mangled as to render it impossible to bring him to the city, expired at Hightstown, in a few hours after the accident. Capt. Vanderbelt, also left behind, is doing well. He had been previously hurt by the oversetting of a gig, near New York: and was, in consequence, much more liable to injury. Mrs. Bartlett and family are out of danger, with the exception of one of her children, who lies in a very languishing state, at Congress Hall.—The remainder of the wounded are said to be in a fair way of recovery. They are Miss Whitehead, of Newport, R. I., one arm broken; Rev. John West, R. I., leg broken, and bruised; Mr. King, R. I., severely bruised; Mr. Dreyfous, of this city, bruised, not dangerously; Mr. Charles, injured severely in the thigh; a medical gentleman from Philipsburgh, Pa., name not ascertained, ribs broken, and bruised.—[Philadelphia paper.]

Law of Patent.—Yesterday afternoon, an important case, which has occupied a week, was decided in the Circuit Court of the United States for this District,—John Ames, of Springfield, against Charles Howard and Wells Lathrop, of South Hadley. The action was brought for the infringement of a patent right, and damages were claimed for the unlawful use of two of his patent Cylinder machines for making paper, from October 26, 1832, to April 9, 1833 The defence rested on the alleged invalidity of the patent for various causes. A *crowd* of witnesses were examined during four days of last week, on behalf of either party. Counsel for the plantiff, W. Bliss, of Springfield, and B. Rand of this city; and Geo. Bliss, of Springfield, and R. Fletcher, of this city, for the defendants. The jury returned a verdict for the plaintiff for $412 50, which being tripled as the law requires, is $1237,50 damages. It is stated that the result of this trial is of very great importance to the paper manufacturers; about 500 of the machines being in use by them, who will each be liable for damages, in an amount of nearly half a million of dollars.

The defendants, we understand, have decided on having it go to the Supreme Court of the U. States, and Daniel Webster has been retained by the plaintiff.—[Boston Centinel.]

We are glad to see that there is some prospect of a peaceable termination of the difficulties in Alabama. The Mobile Commercial Register states that the Marshal has given public notice that the settlers on the Creek lands will not be disturbed before the 15th of January. This will afford time for the present excitement among the people of the State to cool in some measure, unless the Governor should persevere in his determination to render the United States officers accountable to the laws of the State for past proceedings, without waiting to ascertain the sense of the Legislature, or until the matter is brought before Congress.

Sparks' Life of Morris.—The Paris Journal des Debats of the 10 September contains a review of this work, which as it declares has already fixed the attention of Europe. The attention of the reviewer is principally directed to the writings of Mr. Morris on the subject of the French Revolution.

[*From the Sacket's Harbor Courier of Nov.* 7.]

Great Fire at Kingston, U. C.—We learn that on Friday night last, at about half past ten o'clock, a fire broke out in a small back shop in the most central and business part of Kingston. It immediately communicated to other buildings, consuming in all rising of *twenty* valuable buildings, and among them, we regret to learn, the Printing Office and Bookstore of Mr. Macfarlane, Editor of the Kingston Chronicle and Gazette. Value of property destroyed, from 80,000 to $100,000, upon which there were insurances to the amount of about $40,000.

Flatbush Property.—Several acres of woodland at Valley Grove, three miles from Brooklyn, adjoining the turnpike, were lately sold by G. L. Martense, at five hundred dollars per acre. Two acres owned by Mr. M. Clarkson, in the same neighborhood, three and a half miles from the ferry, sold for one thousand dollars per acre.—[Brooklyn Star.]

New Orleans, Oct. 24.—We take pleasure in stating that the account of the loss of the steamboat Rapide, which was published in some of the morning papers, is an error. She arrived at this port this morning.

Naval Department.—Extract of a letter from Doctor Wm. Turk, the fleet surgeon of the U. S. naval forces in the Mediterranean, received at the Navy Department, dated the 13th July, 1833, on board the Frigate United States.

"One year has elapsed since I entered on the duties of Fleet Surgeon: during that period only one man has been lost by disease on board this ship.

"It was formerly too much the practice to wet the decks, without sufficient regard to the weather, or the opinion of the medical officers on the subject. I am happy to say there is a great improvement in this respect, to which may be ascribed, in some measure, the greater share of health enjoyed by our crews at present."

U. S. Frigate Brandywine.—We understand that orders have been issued by the Navy Department, for the equipment of the United States frigate Brandywine, now lying at the Navy Yard, Brooklyn. She has recently been hove down, thoroughly overhauled, and recaulked, and will be ready for sea by the first of February.

It was only necessary to witness the great trouble and expense of heaving down this large ship, to have satisfied any one of the great importance of a *Dry Dock* at this naval station. We hope that Congress will, at its approaching session, make an appropriation for this object.—[Gazette.]

[*From the Globe.*]

We understand that the *ArcadeBank* at Providence, R. I., and *The Farmers and Mechanics' Bank* at Hartford, Conn., have been selected by the Secretary of the Treasury as depositories of the public money at those places.

[*From the Daily Advertiser.*]

Preparing for publication in a volume, *The Letters of Major Downing, originally published in the New York Daily Advertiser*, ornamented with engravings illustrating some of the most interesting scenes described in them, from designs by the most distinguished artist in the United States in this species of drawing. This edition will be corrected, improved, and enlarged, by the illustrious author;—an advantage which no other edition can enjoy. It will contain no letters, except those written for, and published in, the above-mentioned paper, and such as may be added to the number by the same author, who, we are happy to say, has kindly consented to continue his labors occasionally for the benefit of his country.

Much has been said about the "original Major Downing." We have taken no part in the controversy, being perfectly satisfied that our correspondent has shown more originality than any other writer under that title, or almost any other; and no man's works have received more decisive proofs of public approbation, and universal popularity.

The publication will be forwarded as soon as the illustrations can be prepared.

Accident.—The Steamboat North America arrived yesterday afternoon from Albany considerably disabled. We learn that on Monday evening about seven o'clock, when opposite Catskill, the North America was run into by the sloop Gen. Livingston, bound to the latter place. The bowsprit entered the side of the steamboat about 50 feet from the bow, carried away one of her chimneys, and caused other damage. The sloop lost her bowsprit and mast, which fell upon the steamboat. No person injured.—[Mercantile.]

The beautiful new ship Havana, Capt. Correja, is now in her berth on the west side of Old Slip; and as she is to sail for Havana on Sunday next, those who admire perfection in ship-building will do well to visit her. There is a combination of strength, beauty, and accommodation, seldom, if ever exhibited in a vessel of her size. Nothing to our eye, is wanting, nor is there any thing about this vessel superfluous, unless it be the splendor of her finish. We understand her state-rooms are all engaged, which accommodate twenty-four passengers.—[Gazette.]

Another new ship, named the Caledonia, was launched from one of the ship yards of Baltimore on Saturday last. She is 140 feet long and 550 tons burthen, and is intended for one of the packets to ply between Virginia and Liverpool. Messrs. J. J. Brander & Co. merchants of Petersburg, are her owners. We rejoice, says the Philadelphia Inquirer, at these evidences of Southern enterprize in the way of commerce. They will in their results, prove excellent antidotes to nullification.—[Gazette.]

Colonization.—In the Tennessee House of Representatives, Oct. 30th, the following resolutions were adopted:

Resolved, That the select committee on the subject of the American Colonization Society, be instructed to enquire into the expediency of memorializing Congress to make an appropriation of $100,000 annually, to be applied by the said Colonization Society in transporting to Liberia the free coloured population of the United States.

Resolved, That said committee inquire into the expediency of making an appropriation by this general assembly of $500 annually to aid the Tennessee Auxiliary Colonization Society to be applied by the said society in transporting to the colony of Liberia the free colored population of the state of Tennessee.

OFFICIAL.—Order No. 97.

H. Q. of the Army, Adj. Gen's Office,
Washington, October 31st, 1833.

1. The following list of Promotions and Appointments in the Army of the United States made by the President since the publication of the "Order" No. 60, of July 6th, 1833, is published for general information :—

I. Promotions.

First Regiment of Artillery.

1st Lieutenant Giles Porter, to be Captain, 30th September, 1833, vice Smith, resigned.

2d Lieutenant John McClellan, to be 1st Lieutenant, 30th September, 1833, vice Porter, promoted.

2d Lieutenant John Williamson, to be 1st Lieutenant, 30th September, 1833, vice Prescott, resigned.

Brevet 2d Lieutenant William H. Pettes, to be 2d Lieutenant, 30th September, 1833, vice McClellan, promoted.

Brevet 2d Lieutenant Lorenzo Sitgreaves, to be 2d Lieutenant, 30th September, 1833, vice Williamson, promoted.

Third Regiment of Artillery.

Brevet 2d Lieutenant Erasmus D. Keyes, to be 2d Lieutenant, 31st August, 1833, vice Chase, resigned.

Brevet 2d Lieutenant William Wall, to be 2d Lieutenant, 30th September, 1833, vice Hackley, resigned.

Fourth Regiment of Artillery.

Brevet 2d Lieutenant John N. Macomb, to be 2d Lieutenant, 30th September, 1833, vice Norton, resigned.

Brevet 2d Lieutenant, Edward Deas, to be 2d Lieutenant, 31st October, 1833, vice Pendleton, resigned.

First Regiment of Infantry.

1st Lieutenant Jefferson Vail, to be Captain, 11th July, 1833, vice Harney, resigned.

2d Lieutenant Joseph H. Lamotte, to be 1st Lieutenant, 11th July, 1833, vice Vail, promoted.

Brevet 2d Lieutenant Ingham Wood, to be 2d Lieutenant 30th September, 1833, vice Covington, resigned.

Third Regiment of Infantry.

1st Lieutenant Benjamin Walker, to be Captain, 31st August, 1833, vice Webb, resigned.

1st Lieutenant Lewis N. Morris, to be Captain, 31st October, 1833, vice Green, promoted.

2d Lieutenant Wm. R. Montgomery, to be 1st Lieutenant, 31st August, 1833, vice Walker, promoted.

2d Lieutenant John Archer, to be 1st Lieutenant, 31st October, 1833, vice Morris, promoted.

Brevet 2d Lieutenant Albert G. Blanchard, to be 2d Lieutenant, 31st August, 1833, vice Montgomery, promoted.

Brevet 2d Lieutenant James H. Taylor, to be 2d Lieutenant, 31st October, 1833, vice Archer, promoted.

Fourth Regiment of Infantry.

2d Lieutenant Timothy Paige, to be 1st Lieutenant, 17th October, 1833, vice Trenor, appointed Captain of Dragoons.

Brevet 2d Lieutenant Bradford R. Alden, to be 2d Lieutenant, 15th September, 1833, vice Harford, resigned.

Brevet 2d Lieutenant Frederick Wilkinson, to be 2d Lieutenant, 17th October, 1833, vice Paige, promoted.

Fifth Regiment of Infantry.

Brevet Major John Green, Captain of the 3d Infantry, to be Major, 31st October, 1833, vice Bender, resigned.

1st Lieutenant William E. Cruger, to be Captain, 1st October, 1833, vice McCabe, resigned.

2d Lieutenant Alexander S. Hooe, to be 1st Lieutenant, 1st October, 1833, vice Cruger, promoted.

Brevet 2d Lieutenant William Chapman, to be 2d Lieutenant, 1st October, 1833, vice Hooe promoted.

Seventh Regiment of Infantry.

2d Lieutenant Washington Seawell to be 1st Lieutenant, 12th July, 1833, vice Morton, resigned.

II. Appointments.

Staff.

Samuel G. I. De Camp, Assistant Surgeon, to be Surgeon, to take effect 1st December, 1833, vice McMillan, resigned.

Samuel W. Hales, to be Assistant Surgeon, 23d July, 1833.

George F. Turner, to be Assistant Surgeon, 23d July, 1833.

John M. Gardner, to be Assistant Surgeon, 9th August, 1833.

Melines C. Leavenworth, to be Assistant Surgeon, 1st September, 1833.

J. J. B. Wright, to be Assistant Surgeon, 25th Oct., 1833.

Wm. Hughey, to be Assistant Surgeon, 25th October, 1833.

William S. Harnoy, to be Paymaster, 1st May, 1833.

Edwards S. Fayssoux, to be Military Store Keeper, 24th August, 1833.

Regiment of Dragoons.

Appointments to fill original vacancies.

Captains.

1. Eustace Trenor,
2. Nathan Boone,
3. Lemuel Ford,
4. Jesse B. Browne,
5. Jesse Bean.

1st Lieutenants.

1. T. B. Wheelock,
2. C. F. M. Noland,
3. James W. Hamilton,
4. B. D. Moore.

2d Lieutenants.

1. James W. Shaumburg,
2. James Clyman,
3. W. Bradford,
4. John L. Watson.

Brevet 2d Lieutenant John S. Van Derveer, of the 6th Infantry, to be brevet 2d Lieutenant, 1st July, 1830.

Brevet 2d Lieutenant William Eustis, of the 3d Infantry, to be brevet 2d Lieutenant 1st July, 1830.

Brevet 2d Lieutenant George W. McClure of the 5th Infantry, to be brevet 2d Lieutenant, 1st July, 1830.

Brevet 2d Lieutenant E. G. Eastman, of the 2d Infantry, to be brevet 2d Lieutenant, 1st July, 1831.

Brevet 2d Lieutenant Thomas J. McKean, of the 4th Infantry, to be brevet 2d Lieutenant, 1st July, 1831.

Brevet 2d Lieutenant Lus. B. Northrop, of the 7th infantry, to be brevet 2d Lieutenant, 1st July, 1831.

Brevet 3d Lieutenant Gaines P. Kingsbury, of the Mounted Rangers, to be brevet 2d Lieutenant, 1st July, 1832.

Brevet 3d Lieutenant James M. Bowman, of the Mounted Rangers, to be brevet 2d Lieutenant, 1st July, 1832.

Brevet 3d Lieutenant Asbury Ury, of the Mounted Rangers, to be brevet 2d Lieutenant, 1st July, 1832.

Brevet 3d Lieutenant Albert G. Edwards, of the Mounted Rangers, to be brevet, 2d Lieutenant, 1st July, 1832.

III. Casualties.—*Resignations.*

Major.

George Bender, 5th Infantry, 31st October, 1833.

Captains.

Walter Smith, 1st Artillery, 30th September, 1833.

Wm. S. Harney, 1st Infantry, 11th July, 1833.

Stephen H. Webb, 3d Infantry, 31st August, 1833.

Robt. A. M'Cabe, 5th Infantry, 1st October, 1833.

1st Lietenants.

Jonathan Preescott, 1st Artillery, 30th September, 1833.

Alex. H. Morton, 7th Infantry, 12th July, 1833.

2d Lieutenants.

George E. Chase, 3d Artillery, 31st August, 1833.

Charles W. Hackley, 3d Artillery, 30th September, 1833.

William A. Norton, 4th Artillery, 30th September, 1833.

Eras. F. Covington, 1st Infantry, 30th September, 1833.

Brevet 2d Lieutenants.

Wm. H. Sidell, 1st Artillery, 1st October, 1833.

John E. Bracket, 2d Artillery, 31st August, 1833.

Henry Waller, 2d Artillery, 9th October, 1833.

Wm. N. Pendleton, 4th Artillery, 31st October, 1833.

Joel Riggs, 1st Infantry, 9th October, 1833.

Lewis Howell, 7th Infantry, 31st October, 1833.

Nathl. W. Hunter, 7th Infantry, 1st October, 1833.

Surgeon.

Robert McMillian, to take effect 1st December, 1833.

Assistant Surgeons.

Henry Stevenson, 31st August, 1833.

Robert E. Kerr, 31st August, 1833.

Died.

Assistant Surgeon.

Jos. D. Harris, 26th September, 1833.

2. The officers *promoted* will join their proper stations and companies; those on detached service, or who may have received special instructions from this office, will report by letter to their respective Colonels.

3. Brevet 2d Lieutenant *Benj. E. Dubose*, of the 3d Regiment of Infantry, a graduate of 1833, having failed to join his Regiment on the 1st day of October, is, in conformity with the Regulations, *dropped* from the rolls of the Army, to take effect from that date.

By order of Major General Macomb.

R Jones. Adjt. Gen'l.

MISCELLANY.

Mechanical Ingenuity.—M. Droz being at Madrid, he exhibited to the king of Spain a clock, upon which were figures of a shepherd, a dog, and a negro. The shepherd played six airs upon his flute, the dog in the meantime approaching and caressing him. The king expressed his admiration of this, when M. Droz, replied that the gentleness of his dog was but the least of his good qualities. If, he added, your majesty will deign to touch one of the apples in the basket by the side of the shepherd, his dog will evince his fidelity also. The king did so, when the dog flew at his hand, and barked so loudly, that a living dog, which was in the room, gave tongue; and the courtiers, with the exception of the minister of marine hastily left the room, not doubting but M. Droz was a sorcerer. The king, who, of course, was in the secret, desired the minister of marine to ask the negro what o'clock it was. He did so, and obtained no answer. M. Droz, informed him, that, as the negro was ignorant of Spanish, the question should be asked in French. The minister asked it accordingly, and the nergo answered so much to the consternation of the minister that he took flight, vowing it was the work of no one but the devil.—[Agassiz's Journey.]

Remarkable Women.—It is worthy of notice that those women whose excellences have obtained the esteem of posterity have invariably united to their more remarkable qualities the gentleness and delicacy characteristic of the sex. Had they not done so, they would, indeed, scarcely have been loved; and love is the sentiment, with regard to the future as well as the present, which ought to be the chief ambition of a woman to excite. She should desire to be remembered, not only with admiration, but with tenderness; and, therefore, in her nothing can compensate for the absence of those qualities which call forth affection. In looking back, then, upon our celebrated women, it is with pleasure that we remark, that kindness and sweetness gave the polish to their characters. They were not the stern mentors of society; on the contrary, they were as distinguished for mildness as for any other virtue; and we feel that besides being the objects of our esteem, they would have been, had we known them, the companions of our choice. Their humility is no less deserving of praise. There has always been an absence of pretension in superior women, which is consistent with our our preconceived notions of what they ought to be, and with our own actual observation. The position which they occupy is conceded to them, not because they assume it, but because it naturally belongs to them. And the influence they exert is of a quiet and gentle kind. In considering the lives of the most illustrious amongst them, we cannot but be struck with the power they possessed of swaying opinion, Contrast, for instance, the influence of Lady Russell and Mrs. Hutchinson with that of ordinary women. The latter may be, indeed, allowed the control in all minor matters, may be supreme in their domestic arrangements, may be petted and indulged; but if their minds can take no higher range, they will either not be consulted in things of greater moment, or their opinion will have no weight. Yet lady Russel and Mrs. Hutchinson never obtruded their advice, or made any show of their power: their counsel was asked because it was needed, and followed because it was found to be of value. The influence of such women has not been confined to domestic life, but has embraced and adorned an ampler sphere. To say nothing of the effect of their example, the success that has sometimes attended them as authors may be considered a gratifying tribute to their usefulness. Society will acknowledge the debt it owes to those of them who, as moral and religious writers, have attracted public attention, and so materially affected the tone and habits of their sex. Of this, perhaps the most eminent example has shed its lustre on our own day.—[Mrs. Sanford's Female Worthies.]

Dr. Chalmers and Robert Hall.—On the day he preached a sermon in reference to the Luddites, a circumstance occurred which disconcerted all his feelings, and unfitted him for his public engagement.

Dr. Chalmers, then of Glasgow, was on his way to London, and informed him by letter that he intended on that day to be one of his auditors. Unfortunately the message did not arrive till Sabbath morning, within an hour of the commencement of public worship. Mr. Hall had formed so high an estimate of the abilities of this unexpected visiter that he was actually deterred from entering the pulpit; nobody could persuade him to it, and a member of the church was obliged to supply his place. Mr. Hall did not recover his tranquillity the whole of that day. At the close of the morning service Dr. Chalmers called on him at his own house, not knowing but his absence had been occasioned by ill health. After much hesitation he at length consented to preach in the afternoon, on condition that his reverend friend would deliver an evening lecture. This was agreed to; but from the agitated state of his feelings, Mr. Hall was heard to great disadvantage. This was often the case, on much slighter occasions; the appearance of some distinguished stranger, any thing like prying curiosity, or secular applause, would at any time discompose him; and his loftiest strains of eloquence were seldom heard but when he emerged from the depths of private devotion to be embosomed among his own people. In the evening, Dr. Chalmers followed up the subject of the afternoon's discourse, with one on the necessity of immediate repentance, which produced a very powerful sensation on the auditory. Mr. Hall heard with rapturous delight, and said afterwards to a friend, "He stops the people's breath sir: they cannot breathe under such a preacher." And certainly the sermon was one of great merit, though some passages were a little obscured by the Highland pronunciation. The parties spent the remainder of the evening together at Mr. Hall's. The unnerved preacher now recovered in some degree his elasticity, and was ready to launch into a wild field of conversation; but nothing of any importance transpired. The visiter who had frightened Mr. Hall from his propriety now seemed frightened in return; nothing could be elicited, no topic of the smallest interest was brought forward, except that Mr. Hall offered some remarks on various books and authors, to which Dr. Chalmers readily assented, and especially on the absurd attempt of Professor Kidd to reduce the doctrine of the Trinity to a metaphysical theory, to be illustrated by the analogies of nature. A cautious reserve was manifest, accompanied perhaps with a silent admiration of the orator who appeared only in dishabille, and had not that day put forth half his strength.—[Morris's Biographical Recollections of Robert Hall.]

Folly of Objections to Education.—It is not easy to conceive in what manner instructing men in their duties can prompt them to neglect those duties, or how that enlargement of reason which enables them to comprehend the true grounds of authority and the obligation to obedience should induce them to disobey. The admirable mechanism of society, together with that subordination of rank which is essential to its subsistence, is surely not an elaborate imposture, which the exercise of reason will detect and expose. The objection we have stated implies a reflection on social order, equally impolitic, invidious and unjust. Nothing in reality renders legitimate government so insecure as extreme ignorance in the people. It is this which yields them an easy prey to seduction, makes them the victims of prejudice and false alarms, and so ferocious withal, that their interference in a time of public commotion is more to be dreaded than the eruption of a volcano.—[Robert Hall.]

The Banks of Newfoundland.—These banks extend over a space of forty thousand miles, and are from thirty to forty-five fathoms below the surface of the ocean. The shoals are inhabited by innumerable tribes of muscles and clams, to which it is a favorite residence, as they can easily bury their shells in the soft sand. They have enemies to contend with. The codfish resort to this coast to prey on them. They keep a constant watch, and swim about a foot above the sub-marine sands; when a muscle opens its shell, it is immediately seized and devoured. At other times the fish do not wait: they are providid with a horny protuberance round their mouths; with these the burrow in the sand, and capture the muscle in its shell. The fishermen of various nations, French, English, and Americans, who resort to these banks, take annually from eight to ten millions of fish; on opening them they find the remains of twenty or fifty muscles in each—sometimes the muscle-shells are found either wholly or partially dissolved. The first care of the fishermen, after taking their stations, is to ascertain the depth of water: the lines must be regulated so as to lie on the bottom, where the fish are always engaged in this species of sub-marine war.

The consort of the Emperor of China died at Pekin on the 15th of July. A general morning has been ordered in consequence. The Mantshur *employés* are for 28 days to wear garments of coarse white linen, and caps without tassels or buttons; during a hundred days they must not shave their heads. The mongolian *employés* are to assume the same mourning, with the exception of the white garments. The Chinese must leave their heads unshaved for the same period, and are to wear no tassels on their caps for seven days. The right of nominating the Empress belongs to the Emperor's mother, who solicits, within three years, one of the five spouses of her son for that office.

Slaughter of Whales: their strong affection for their young.—After dinner I went to view the whales: what a slaughter! One of the gentlemen who was present at the taking of one of them yesterday told me, that the water of the bay for a mile distant from the place of attack was dyed with their blood. The Shetlanders having succeeded in driving them into shallow water, where they could not swim freely, attacked them with spears, and even swords, and so dextrous are these islanders, that in general they pierced their hearts at the first thrusts, so that most of them were killed in an instant! About fifty persons were present at the attack, and it is the custom here, that each person has share and share alike. Mr. Robinson, a respectable merchant of this place, amused me by the following anecdote:—'Hearing of the shoal of whales that had entered the bay, five poor women got a boat, and set off hovering on the skirts of the scene of action: a large whale, that had received his death wound, and was striving to regain the ocean, failed: the women perceived him, rowed up boldly to him, entangled him, his strength being nearly gone, made him fast to their boat, and towed him safely off to a landing-place near to their own dwelling!' In this shoal there were a few young ones, and it is the young in general that occasion the capture of the old ones; for they heedlessly run into the shoal water, and so attached are these monsters to their offspring that they will risk their lives to save them. A friend told me that he saw one of the female whales take her wounded young under her breast fin, and endeavour to make her escape with it. He saw another young one, which appeared to be greatly terrified, dash itself upon the shore, where it was soon killed: the mother, which had been near the shore, had turned and was regaining the deep water; but missing her young one, and finding no doubt by instinct, or smell, that it had gone ashore, she turned to again, took the same direction, and absolutely dashed herself on shore aside her young, where she also was immediately speared.—On examination of several of these females, I found two cavities near the navel, on each side, in which their teats were included, and which they can extrude at pleasure, in order to suckle their young; thus exemplifying Lam. iv., 3, "*The Sea monsters draw out their breasts to their young.*"—[Life of Adam Clark.]

POETRY.

[FOR THE NEW-YORK AMERICAN.]

The author of the following lines, is one deeply tried in the furnace of affliction, a young and interesting female, for nine wearisome years, the victim of excruciating, uncompromising disease, deprived of nature's sweet restorative—sleep—unless obtained by artificial means, and of most of those comforts which scarce serve to alleviate the sufferings of many more fortunate, tho' perhaps not more happy, who recline on beds of down—she is a christian.

In the restless watches of the night she composed many pieces of poetry, touching from their strain of simple pathos, and extraordinary, as the productions of a secluded, self-educated girl, whose reading has been quite limited, her favorite author Cowper. Unable to endure the fatigue of writing, she at some convenient time, perhaps after the lapse of weeks, dictated to an amanuensis, her aged and most venerable father, these effusions of her innocent mind. It was a beautiful sight to look upon. The poor girl, from her bed of suffering, repeated her verses line by line to the patient old man (now in his seventy-eighth year and rapidly declining) while he carefully listened to her words and committed them to paper.—Strange to say, though quite hard of hearing when addressed by others, he caught every sound from the lips of his loved child of sorrow, though uttered in a low and plaintive voice. It is probable that a collection of her poems will ere long be published. The present one appeared in an eastern paper, but probably has not met the eye of many of your readers.

L.

ODE TO THE POPPY.

Tho' varied wreaths of myriad hues,
As beams of mingling light
Sparkle replete with pearly dews,
Waving their lucid leaves profuse,
To captivate the sight:
Tho' fragrance sweet exhaling blend
With the soft balmy air,
And gentle zephyrs, wafting wide,
Their spicy odors bear;
While to the eye,
Delightfully,
Each flowret laughing blooms,
And, o'er the field
Prolific, yields
Its incense of perfumes;
Yet, one alone o'er all the plain
With lingering eye I view;
Hasty I pass the brightest bower,
Heedless of each attractive flower,
Its brilliance to pursue.
No odors sweet proclaim the spot
Where its soft leaves unfold,
Nor mingled hues of beauty bright,
Charm and allure the captive sight,
With forms and tints untold;
One simple hue the plant portrays,
Of glowing radiance rare,
Fresh as the roseate morn displays,
And seeming sweet and fair;
But, pressing close, its nauseous breath
Disgusts the bright and gay,
And from the hand, with eager haste,
Is careless thrown away,
Unthinking that, in evil hour,
Disease may happiness devour,
And that fair form, elastic now,
To Misery's wand may hopeless bow.
But reason leads wan sorrow forth,
To seek the lonely flower,
And blest experience kindly proves
Its mitigating power.
Its own bright hue the sight can trace,
The brilliance of its bloom;
Tho' misery veil the weeping eyes,
Tho' sorrow choke the breath with sighs
And life deplores its doom,
This fated flower,
In desperate hour,
A balsam mild shall yield;
When the sad sinking heart
Feels every aid depart,
And every gate of hope forever sealed,
Then shall its potent charm
Each agony disarm,
And its all healing power shall respite give.
The frantic sufferer then,
Convulsed and wild with pain,
Shall own the sovereign remedy and live.
The dews of slumber now
Pass o'er the aching brow,
And o'er the languid lids balsamic fall,
While fainting nature hears,
With dissipated fears,
The lowly accents of soft Sommus' call:
Then will affection twine
Around this magic flower,
And grateful memory keep
How in the arms of sleep
Affliction lost its power.

1825 C. T.

SONNET.—A VILLAGE TOMBSTONE.

Approach! thou visitant of gorgeous tombs,
And costly mausoleums, whose august
And sculptured massiveness bespeaks the dust
Beneath once noble,—*here* no statue glooms
Rebuke from its dark niche, nor earth resumes
Her own with ghastly pageantry; nor bust,
Nor aught of grandeur's dim heraldic trust,
Here flatters the poor clay that clay consumes.
Approach, and mark where last the soul hath heaved,
And trace one record of the lowly dead,—
"He lived—he died." What sculptor e'er achieved
More on rich marble, trusted not when read?
This simple stone speaks truth, and is believed.

Bishop Wearmouth. G * * * *.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber. D. K. MINOR, 35 Wall street.

New-York, August 14. 1833.

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.

81 R J M M & F

MARRIAGES.

Last evening, at Carroll Place, Bleecker street, by the Rev. J. B. Seixas, I. M. Henriques, Esq. late of Kingston, Jamaica, to Esther, daughter of the late David Nunes, Esq. also of Kingston, Jamaica

On Thursday evening, by the Rev. John Goldsmith, Samuel Leverich, to Sarah, daughter of the late Jesse Leverich, Esq. of Newtown. L. I.

On the 4th inst. Thos. Sears, to Isabella, eldest daughter of the late John Westray, all of this city.

In Brooklyn, L.I. on Tuesday evening, 19th instant, by the Rev. Mr. Dwight George Worthington Dow, (of the firm of Josiah Dow & Co. New York.) to Miss Anna De Be Voise, daughter of the late Christopher Prince.

At Albany, on Tuesday morning, the Rev. Wm. Lehman, Professor of Modern Languages in the University of Georgia, to Miss Harriet Maria, youngest daughter of Abm. Van Vechten, Esq of Albany.

At Greenwich, (Conn.) on the 28th ult. S. H. Seaman, of Albion, N. York, to Miss Eunice B. Hobby, of the former place.

At Philadelphia, Selby Bradford, to Mrs. Mary Wood.

At the same place, Wm. Duane, Jr. Esq. to Louisa Brooks.

DEATHS.

This morning, at the City Hotel, Mr. Joseph Haertl, a native of Bavaria, aged 23 years.

Mr. Haertl was one of those accomplished musicians from Bavaria, whose concerts have delighted so many parts of our country. His remarkable bass voice will be long remembered. The deceased, who, with his comrades, was exposed to such great peril by the conflagration of the Hotel in Montreal last winter, never recovered from the cold he took on that occasion; and after lingering, with occasional temporary improvement, until now, has sunk at last in a strange land; and yet not among strangers, for he had made many friends; and those, moreover, so long his companions in his beautiful art, were faithful and assiduous around his death bed.

On Wednesday evening, Mr. Joseph Hill, in the 32d year of his age.

Friday night, 8th instant, at ¼ before 12 o'clock, in full assurance of a blissfull immortality, after an illness of 18 months, which he bore with a patience peculiar only to the Christian, Mr. John Young, aged 39 years and 21 days.

At Philadelphia, on Monday, 4th inst., in the 77th year of his age, R. E. Griffith, Esq.

At his residence in Stillwater, on Monday, the 28th ult. Major Ezra Buell, in the 90th year of his age. So fall our Revolutionary patriots. He was an officer in the Revolutionary army for six years; but at the battle of Bemes's Heights he left his company and became a pilot for Gen. Gates's army, and led every brigade to its station. In the battle of October 7, 1777, he was wounded in the side at the time of leading Col. Morgan into action, but did not leave the field. He was never married, but lived with one family upwards of sixty years.

In St. Mary's county, Md., on the 19th ult. the Hon. Raphael Neale, formerly member of Congress, for that District.

At Washington, on Saturday last, Mr. Lewis Clephane, aged about 81 years Mr. C. was a native of Scotland. He emigrated to this country and settled in New York in the year 1782.

On the 17th of Oct. at her residence, New Smyrna, East Florida, Mrs. Mary Dunham, widow of the late David Dunham. of this city.

At Fort Smith, Arkansas, of fever, on the 26th of September last, in the 30th year of his age, Josiah Dwight Harris, M. D. Surgeon to the corps of Rangers—son of the late Rev. Wm. Harris, D D President of Columbia College.

It is seldom we have the task of noticing the death of so promising a young man. In his profession Dr. Harris stood first among its junior members in this city, and would no doubt (had he possessed pecuniary advantages) have attained its highest honors. His examination for his situation in the army was brilliant, showing an accuracy and degree of acquirement seldom equalled by one so young—he passed first and received the highest honor that could be conferred. Dr. Harris had warmly endeared himself to those with whom he was associated, and his loss is deeply lamented by an afflicted family and a large circle of friends—but the "brilliant noon" of his existence has been curtailed by "death's gloomy night," and the fair promise of his rising greatness is shrouded in the tomb.

BOSTON AND WORCESTER RAILROAD.

Proposals will be received until the 2d December next, for the GRADING AND MASONRY of the Third Division of the Road from Southborough to Grafton.

Further information may be obtained at the Company's Rooms, Nos. 7 and 9 Joy's Building, Boston.

n16 2t NATHAN HALE, Superintendant.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Renesselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 81 R J M M & F

☞ THE ADDRESS OF J. P. KENNEDY, Esq. of Baltimore, delivered before the Members of the American Institute in this city, together with a full account of the FAIR, held at Masonic Hall, for 1833, and for which a copy-right has been secured, is just published in pamphlet form, at the office of the Mechanics' Magazine, No. 35 Wall street, where it may be had by the single number, dozen, or hundred. n16

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

⁎ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. 81 R J M M & F

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York,
January 29, 1833. F3 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part o the New-York and Harlæm Railroad, now in operation.

J25 tf

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

INSTRUMENTS

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

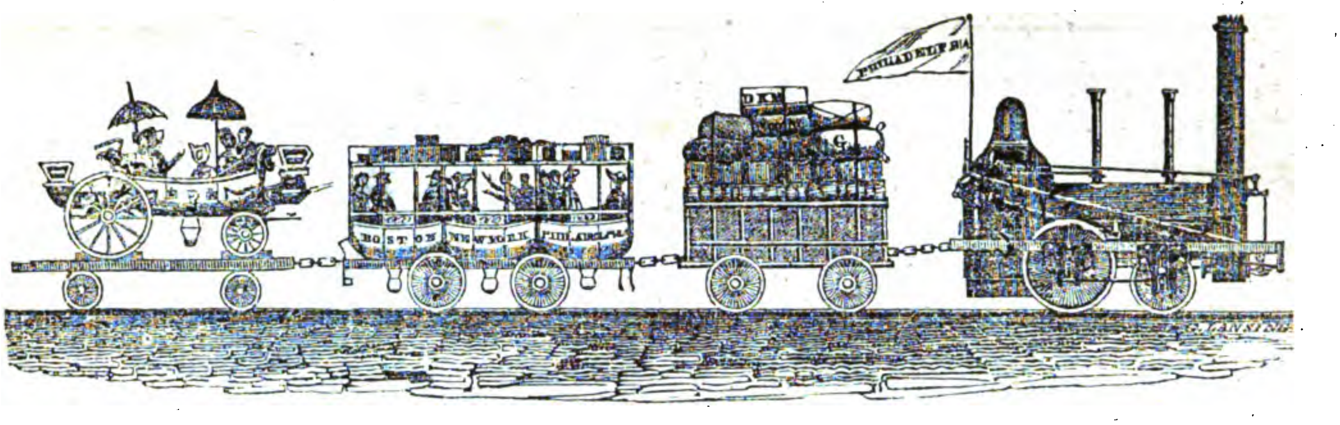
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m28



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] **SATURDAY, NOVEMBER 23, 1833.** [VOLUME II.—No. 47.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, NOVEMBER 23, 1833.

☞ **FIVE** Numbers more will complete the second Volume of the RAILROAD JOURNAL. It was stated in a previous number that *thus far* it had not paid its expenses—at the same time a suggestion was made to *Railroad Companies*, and to individuals who feel a deep interest in the success of *Internal Improvements*, and especially of the RAILROAD cause, that they would probably promote, not only their own, but also the public interest, by ordering a few copies of the Journal from its commencement, *bound*, in volumes or parts, as well as one or two additional subscriptions to the ensuing Volume, and thereby insure its continuance, and increase its usefulness. In reply to that suggestion, several liberal and highly complimentary communications have been received from gentlemen in different parts of the country, from which little doubt is entertained by the proprietor of the success of the measure which he adopted to insure its continuance, and increase its utility to the public. It is proper, however, for him now to state, that, in order to insure its success and prosperity, it will not be sent to any subscriber, after the close of the *present* volume, who shall *then* be in *arrear* for the work—until payment shall have been made for the past, and *in advance for the then current volume*. It is also proper for him to state, that, should it be continued in its present form, he will print, of the ensuing volume, a small number *only* in addition to what will be necessary to supply those who shall *commence with the year*—and that those extra copies will be designed *expressly* for those who may desire it from the *commencement* of the work.

It has been suggested to us by several friends of the Journal, that it would be more serviceable, because *better preserved*, if it were to be issued in *semi-monthly* or *monthly* parts, stitched in a cover, instead of weekly numbers, as heretofore. Of the importance of this suggestion scarcely a doubt can be entertained, as there would be fewer losses in the mails, and they would be much more easily preserved; yet many of its readers desire to learn more frequently than once a month what new improvements are being made, and therefore prefer its present arrangement. Others, again, have recommended an increase of price to *four*, instead of *three* dollars. To *this* suggestion *we* certainly should not object, if we thought our subscribers generally would cheerfully comply with it. In order, therefore, to ascertain their opinion upon both suggestions, and at the same time show the work in a *semi-monthly* form, with a cover, we shall issue the *two* last numbers of the present Volume together, with a Title Page and Index to the second or last half of the Volume, that they may then say how they prefer to receive it the ensuing year.

*** Necessity, and *necessity only*, will compel a discontinuance of many *exchange* papers, and the Proprietor trusts that those Editors who may not receive the Journal after the first number of the ensuing volume, will attribute its discontinuance to the true cause, viz. a want of patronage to meet its necessary expenses, and not to a want of inclination to reciprocate their favors. Should a different state of affairs result from his present exertions, he will be happy again to renew the acquaintance. He regrets also that he is entirely unable to comply with the oft-repeated "Please exchange," which meets his eye from every quarter of the Union. Nothing would afford him more pleasure than to exchange with all who may desire it—*except* such an increase of patronage as would afford him a handsome income over all expenses.

NEW-YORK AND ERIE RAILROAD CONVENTION.—A convention of delegates from the counties immediately interested in the proposed railroad from this city to Lake Erie, through the southern tier of counties, assembled in this city on the 20th instant, and continued the meeting by adjournments till the evening o the 21st.

Delegates appeared and were recognized from the counties of Chatauque, Cattaraugus, Allegany, Steuben, Tioga, Broome, Otsego, Cortland, Delaware, Sullivan, Orange, Rockland, and New-York.

The convention was organized by the appointment of his Honor Gideon Lee, President;

George D. Wickham, Esq. of Orange, and James Pumpelly, Esq. of Tioga, Vice-Presidents;

William W. McCay, Esq. of Steuben, and David Ruggles, Esq. of Orange, Secretaries.

Much information was communicated respecting the practicability and incalculable importance of the proposed thoroughfare through so extended a section of the State, which is destitute of adequate facilities to our commercial metropolis; and also respecting the deep and universal interest felt by the inhabitants on the route, and their disposition to aid to the utmost of their ability in the furtherance and accomplishment of the enterprize.

Numerous resolutions were adopted on the subject; and also a petition to the Legislature for aid to the southern counties, through the medium of the New-York and Erie Railroad Company, in the execution of the work; these counties having long been encouraged to expect the assistance of the State, in opening an avenue to market, by which they may be placed on a footing corresponding in some measure to the advantages which have been conferred, by the legislation and funds of the State, on the more northerly counties.

Provision was made likewise for an address to the public on the subject of the railway.

A more particular statement of the proceedings, together with the resolutions, petitions, &c. &c. will be given in our next number.

RAILROAD MEETINGS.—We give to-day the proceedings of two meetings called in different sections of the United States, for the purpose of promoting the cause of *Railroads*; and it may be proper for us here to observe, that it is our intention to notice, hereafter, in a concise manner, *all* meetings called for the purpose of promoting the cause of *Internal Improvements*, which may fall under our observation, that those of our readers, who may desire to know what works of the kind are in contemplation, may not have occasion to look elsewhere for the information.

A Comparison of the Expense of Transporting 5000 *Tons of Coal* 100 *miles by Locomotive Engines, and by Canal Boats, deduced from actual Work performed on the Little Schuylkill Railroad, and on the Lehigh and Delaware Canals.* [For the American Railroad Journal.]

It is proper to premise that a locomotive engine has for a considerable time during the past summer made three trips a day, with forty-four tons of coal at each load; thus transporting one hundred and forty-four tons per day, from Tamaqua to Port Clinton. The usual business is however ninety-six tons for one engine; this is done with ease in short days, and could very conveniently be increased, if the daily distance to be passed was greater.

It is proposed in the following estimate to allow for the work of the engine, one hundred tons a day for twenty miles, or twenty tons a day transported one hundred miles, for two hundred and fifty days.

CAPITAL EMPLOYED.

Cost of engine and tender, -	$5,000 00
One-fifth additional is estimated,	1,000 00
Sixteen coal waggons at $100 each, - - - -	1,600 00
One-fifth extra, - - -	320 00
	$7,920 00

ANNUAL EXPENSE.

Interest at 6 per cent., -	$475 00
Repairs at 10 per cent., -	792 00
Depreciation 5 per cent., -	396 00
One engineer at $2, - -	500 00
One fireman at $1, - -	250 00
Two breakmen, - -	450 00
Oil, 375 gallons at $1.12½, -	422 00
Two cords pine wood per day at $2, - - - - -	1,000 00
20×250=5000)	$4,285 20
	$87 07

Or 87$\frac{7}{10}$ cts. nearly per ton, for 100 miles.

The following estimate of the expense of transporting 5000 tons on the Lehigh and Delaware Canals is deduced from statements furnished by boatmen, of the work actually done by them. This, it may observed, can be increased but little without running in the night. The boatmen say that they could gain nothing by a relieve of horses, the locks are so frequent that the horse rests and feeds sufficiently.

It is further to be remarked, that the railroad waggons are loaded in or at the mouth of the mine from whence the coal is carried to the depot, and that as the boat cannot be brought to the mine, the expense of transporting the coal from the mine to the boat and unloading it into the boat is an additional expense incidental to the canal, and the waste of coal by this operation is also in addition, for these items not being precise data, $8 per ton are allowed. The labor of unloading the coal from the boat at the wharf is also greater than that of unloading from waggons, and a part thus handled must be shovelled on the screen, which is not required when the coal is unloaded from waggons, for this labor $10 per ton are estimated.

Estimate.—It is ascertained from experience that 2 good horses, with 4 men and 2 boys, will haul 100 tons of coal in 2 boats 100 miles on the Lehigh and Delaware Canals, and return in 12 days; hence 24 horses with 48 men and 24 boys take 100 tons in 24 boats 100 miles in 1 day and return.

To transport the same quantity 20 miles a day, or one fifth of that distance, will require 48 horses, 9.6 men, 4.8 boys, and 4.8 boats. To simplify the calculation, 5 horses, 10 men, 5 boys and 5 boats, are supposed to be employed and the proper deduction made from the aggregate.

CAPITAL EMPLOYED.

Five boats at $600 each -	$3,000 00
One fifth extra - - -	600 00
Five horses at $80 each -	400 00
One fifth extra - -	80 00
Five harness at $6 - -	30 00
	$4,110 00

ANNUAL EXPENSE.

Interest at 6 per cent., - -	$246 00
Repairs of boats 5 per cent., -	180 00
Depreciation of do. and horses 15 per cent., - - -	616 50
Keeping 5⅕ horses at $20 per year - - - - -	625 00
Wages of 5 men at $1 per day, (250 days) - - - -	1,250 00
Wages of 5 men at 90 cts. - -	1,125 00
Wages of 5 boys at 75 cts. - -	937 50
	$4,979 00
As 5 : 4079.60 :: 4.8 :	4,760 42
Unloading waggons from mine to boat, and waste 8 cts. per ton,	400 00
Additional expense for unloading boats and screening $10 -	500 00
	5,660 42

Which ÷5000=$1.13.11 : or $1.13⅕ per ton for 100 mi[illegible]

The above statements are made from actual performance on the railroad and canals referred to, and the expense thus ascertained *for transporting* on the canal, viz.: 95⅕ cents per ton for 100 miles, is almost precisely the same that it paid for boating coal on the Lehigh and Delaware Canals, exclusive of the charge for loading and unloading, which is paid for in addition. Yours, &c. I.

Chenango Canal Notice.—Sealed proposals will be received by the canal commissioners until the *thirtieth day of November* next, for constructing about *thirty-eight miles of said canal, to wit: from the Erie canal near Whitesborough, to the village of Sherburne*, and also, *eighty-seven locks*, five or six of which are to be combined locks, of stone masonry, and also the lock on the level, connecting with the Erie canal; *two aqueducts of stone masonry, two aqueducts with wooden trunks*, and the necessary *bridges, culverts, and waste weirs*.

For the Sections.—The propositions should state a specific price for grubbing and clearing the section, for extra grubbing and clearing by the acre, for extra side chopping and clearing by the acre, a price per cubic yard for common excavations, for solid slate, and quarried rock, for cemented clay and gravel, or cemented sand and gravel, for quick-sand, for embankments, for lining, for puddling, and for slope wall.

For Locks with Wooden Chambers.—The propositions should state a specific price per cubic yard for excavation, for embankment, for masonry laid in hydraulic cement, for dry wall masonry, a price per cubic foot for oak, pine, and hemlock timber, a price per M. feet, board measure, for oak, pine, hemlock, and cedar plank, boards, and scantling, a price per foot run for bearing piles, and a sum in gross for all wrought and cast iron, excepting paddle gates.

For Stone Locks.—The propositions should state a specific price per cubic yard for the masonry, which is to include the cutting of the hollow quoins, the coping and culverts, the face of the lock to be hammered work, the propositions in other respects to be the same as for the locks with wooden chambers, excepting the dry wall.

Aqueducts of Stone Masonry.—The propositions should state a specific price per cubic yard for foundations, for masonry in the arches, and for other masonry, a price per cubic foot for oak, pine, and hemlock timber, a price per M. feet, board measure, for pine and hemlock plank, boards, and scantling, a price per pound for the iron work, and a price per foot run for bearing piles.

Aqueducts with Wooden Trunks.—The propositions should in all respects be the same as for the aqueducts of stone masonry, excepting the arches.

Culverts.—The propositions should state a specific price per cubic yard, for excavating for the foundation, for masonry in arches, and for other masonry, a price per cubic foot for hemlock timber, a price per M. feet, board measure, for pine and hemlock plank and boards.

Bridges.—The propositions should state a specific price per cubic yard, for excavating for the foundation for stone masonry laid in quick lime mortar, a prise per cubic foot for oak, pine, and hemlock timber, a price per M. feet, board measure, for pine and hemlock plank, boards, and scantling, a price per pound for iron work, a gross sum for painting with two coats of white lead.

Waste Weirs.—The propositions should state a specific price per cubic yard, for excavating for the foundation, for stone masonry in hydraulic cement, a price per cubic foot for oak, pine, and hemlock timber, a price per M. feet, board measure, for oak, pine, and hemlock plank, boards, and scantling.

The prices for the enumerated items, in the structures above mentioned, are to include the expense of every kind of material and labor necessary for their construction.

The oak and pine timber is to be cut in the month of February, 1834; the oak timber for gates in the locks and waste weirs to be sawed previous to the first day of October, 1834, and put under cover; the timber for the pine plank, boards, and scantling, to be cut in February, 1835, and sawed and put under cover previous to the first of June of that year.

The contracts are to contain stipulations prohibiting the use of ardent spirits, and subcontracting the work, except for delivering materials, and are to be completed by the fifteenth of October, 1836.

Security will be required for the performance of the contracts, and the propositions should be accompanied by the names of responsible persons, signifying their assent to become sureties. If the character and responsibility of those proposing, and the sureties they shall offer, is not known to the undersigned, or the chief or resident engineer, a certificate of good character, and the extent of their responsibility, signed by the first judge or clerk of the county in which they severally reside, will be required.

No transfer of contracts will be recognized.

The line of the canal and the maps and profiles, and the plans for the different structures, with specifications of the kind of material and manner of construction, will be ready for examination by the 11th of November. The chief and resident engineers will be on the line or in its vicinity, to give all necessary information, and will furnish blank propositions. The undersigned and the chief engineer will attend at the village of *Hamilton*, from the 25th to the 30th of November, to receive propositions.

The party to the propositions which may be accepted will be required to enter into contracts immediately after the 30th of November.

Wm. C. Bouck,
Acting Canal Commissioner.

October 22, 1833.

P. S.—Publishers of papers in the State of New-York will confer a public favor by giving the above one or two insertions in their paper.

Suspension Railway.—The Boston Transcript, in noticing the proposed improvements in East Boston, that is, we suppose in the islands in Boston harbor, has the subjoined account of a suspension railway:

We were particularly interested with the novelty of a Suspension Railway, located across the marshes, for the purpose of testing, as we are informed, this truly American invention, and to correct, by actual demonstration, the many misconceptions relative to this very economical and highly important mode of transporting passengers and merchandize. Great curiosity was evinced to see how a car, intended to convey twenty or thirty passengers on two wheels only, one *before* the other, could rûn upon a single rail, which it did with perfect steadiness, and without the possibility of accident of any kind. There seemed to be but one opinion on the subject, and all were strongly impressed with the usefulness and importance of the invention. A locomotive engine was running upon the railway all the afternoon, but being in an unfinished state, it was not attached to the car. We sincerely wish success to the several projects contemplated on this island, and that the growth and prosperity of this new city may equal the hopes and industry of its enterprizing owners.

STEAM CARRIAGE.—The following paragraph on this subject, is from a late Birmingham paper:

On Wednesday last, Messrs. Heaton, of Birmingham, made another experiment with their steam coach, to ascend the hill at Bromsgrove Lickey, which is a loose sandy surface, so much so, that the wheels of their machine, above fifteen hundred weight, carried a hill of sand before them about three inches deep. The hill is about seven hundred yards long, and rises on an average one yard in nine, and in some places one yard in eight, and is declared by eminent surveyors to be the worst piece of road in the kingdom. The hill was mounted by their machine, with a mail-coach attached, fifteen hundred weight, and nine persons, in nine minutes. They then took up a number of their friends, and proceeded on to Bromsgrove, as far as the market place, there they turned the machine around, and returned to the Crab Mill Inn, about fifteen miles; this was accomplished in two hours and twenty-two minutes, including all stoppages. Having staid a considerable time at the Crab Mill Inn, they returned home, having accomplished the greatest undertaking in the history of steam locomotion on the common road. They arrived in Birmingham, bringing with them up Worcester street, an ascent of one yard in twelve, thirty-two persons.

Load of a Locomotive Engine. By HENRY D. BIRD. [From the Petersburg Intelligençer.]

GENTLEMEN,—The following account of the performance of one of our engines will no doubt interest you and many of your readers.

On Monday last, the Liverpool brought in a train, consisting of 15 cars, and one coach, carrying 127 bales of cotton, 364 bushels of wheat, 162 bushels of corn, and about 30 persons, including passengers and agents of the company. The gross weight in motion may be summed up as follows:

Produce and passengers,	83,620 lbs.
Cars, Coach and Engines,	67,500
	151,120

or nearly 62½ tons. The weight of produce alone was upwards of 35 tons. This load was put in motion with great ease by the engine, and on level ground was carried at a speed of 15 miles per hour. It was set in motion on ascents of 30 feet to the mile, (on which we had occasion to stop, and set down passengers,) and carried them up at a rate varying from 8 to 10 miles an hour.

This is the largest load which has ever been on the road at any single time, and when we compare it with the small size of the engine, and consider the various ascents on the railroad, it may well be called immense. The Liverpool weighs about five tons, and has 9 cylinders, with a stork of 18 inches, and drives four wheels. Her general working pressure is 50 pounds, ranging up to 60, which the lock-up valves blows off. I add the technical details in order that the performance of this engine may be justly appreciated by professional men.

Yours, respectfully, HENRY D. BIRD.

Specification of the Patent granted to RICHARD TREVETHICK, *of St. Aith, in the County of Cornwall, Engineer, for an Improved Steam Engine.* Dated Feb. 21, 1831. [From the Repertory of Patent Inventions.]

To all to whom these presents shall come, &c. &c.—*Now know ye*, that in compliance with the said proviso, I, the said Richard Trevethick, do declare that the essential points in my improved steam engine for which I claim to be the first and true inventor, are

Firstly, The placing of the boiler within the condenser in order to obtain the additional security of the strength of the condenser to prevent mischief in case the boiler should burst, and also by the same arrangement to conveniently make the condenser with a very extensive surface, enabling me to condense the steam without injecting water into it:

Secondly, The enclosing of the condenser in an air water vessel, by which the intention of safety from explosion is further provided for, and my engine, really rendered what I denominate it, *a high pressure safety engine:*

Thirdly, The condensing of the steam in the condenser by means of a current of cold air or cold water forced against the outsides of the condenser:

Fourthly, The returning of the condensed steam from the condenser back again into the boiler, to the end that sediment and concretion in the boiler may be prevented: and,

Fifthly, The blowing of the fire with the air after it has been heated by condensing the steam.

In forming my improved steam engine, I employ several or all of these points according to convenience, in combination with the other necessary parts of steam engines in common use.

These my essential points will admit of various modifications as to form and proportions, such as must be and are quite familiar to every competent steam engine manufacturer, and therefore it will be sufficient for the perfect description of my improved steam engine that I explain some of the modes of forming and combining the essential points of my invention with the other parts of steam engines in common use.

In my most favorite form of engine, in which I condense by a current of cold air, the fire-place and flue, the boiler, the condenser and the air-vessel, are made of six concentric tubes, standing in an upright position. The inner or first tube forms the fire-place and flue, and at the same time the inner side of the boiler. This tube is conical having its small end upwards. The next or second tube is cylindrical, about six inches larger in diameter than the lower end of the first tube, and forms the outside of the boiler, leaving a space all around of about three inches at the bottom, and so much more at the top as the flue is taper, for holding water and steam between the two tubes. The third tube is about two inches larger in diameter than the second, in order to allow a space of about an inch for powdered charcoal or some other slow conductor of heat. This tube also constitutes the inner side of the air-vessel. The fourth tube is about two inches larger than the third, and forms the inner side of the condenser. The fifth tube, about two inches larger than the fourth, forms the outside of the condenser; and the sixth tube, about two inches larger than the fifth, forms the outside of the air-vessel and at the same time the outside of the whole of the generating and condensing apparatus, consisting of fire-place, flue, boiler, condenser, and air-vessel. These tubes are made of wrought-iron plates rivetted together, and are all cylindrical except the first, which is conical, the bottom or fire end being the largest.

The first inner tube is closed at the bottom, but has an opening on one side near the bottom, through which the fire-bars are introduced and the ashes and clinkers taken away. To this opening a neck-piece about three inches long is rivetted, having a flanch to fit against the inside of the second tube, when the two tubes are concentric; through the side of which second tube is an opening corresponding with that in the first tube, and the flanch is screwed to the second tube so as to make one opening through the sides of the two tubes. The second tube extends downwards about five inches below the first tube and has a flanch turning inwards, to which a round plate of iron is screwed, forming the bottom of the boiler.

The first tube has an external flanch at the top, and the second tube an internal flanch, both of the same height, and screwed to a cast iron circle plate or cap-piece, which extends wide enough around the boiler to form also the cover for the air-vessel. This plate has a hole in the middle as large as the flue. The sides of the condenser and air-vessel are formed of four concentric tubes, each about two inches larger than the one within it. The inner and outer of these tubes constitute the sides of the air-vessel, and are each furnished with an external flanch at the top, by which they are screwed to the cap-piece. The two intermediate tubes constituting the sides of the condenser are rivetted together at the top, leaving a space of about an inch between their upper ends and the cap-piece, so as to allow of a free communication over them between the outer and inner parts of the air-vessel. The inner tube of the air-vessel extends downwards about an inch below the boiler, and is closed by a flat plate screwed on to a flanch projecting inwards from the tube. The two tubes of the condenser descend about three inches lower than the boiler, the inner tube has an internal flanch to which a flat circular plate is screwed to close up the tube. The outer tube of the condenser is of the same length with the inner, and provided with an external flanch about three inches broad. The outer tube of the air-vessel has an external flanch two inches broad, and is just long enough to come down upon the broad flanch of the condenser last described, and these two flanches are together bolted upon a bottom piece of cast-iron, which is a dish of four inches deep, and equal in diameter with the diameter of the outer tube, and having a flanch the same breadth as the flanch of the outer tube, and the bottom piece is secured to the air-vessel, and the outer tube of the condenser by bolts going through all the three flanches.

An opening is made through the sides of all the four tubes of the condenser and air-vessel, opposite to, and as wide as the fire-place, opening through the side of the boiler. The upper part of both openings to be of the same height, but the outer opening is made as low as the bottom of the boiler, in order to allow room for a pipe to enter that part of the boiler for forcing the water into it, and also another pipe and cock for drawing off the water or sediment, in case foul water be used by accident or carelessness. These two openings through the condenser and air-vessel, and through the boiler, constitute one fire doorway through all the six tubes for access to the fire-place. A ring is placed between the two tubes of the condenser around the fire doorway, so as to cut off all communication of the steam in the condenser with the air in the doorway. Another similar ring is placed between the condenser and the outer tube, to prevent the escape of air into the fire doorway. And a half ring is placed in the lower part of the fire doorway, between the condenser and the inner tube of the air-vessel, to prevent ashes from falling into the air-vessel, and yet allow a free passage for the air from the inner part of the air-vessel into the upper part of the fire doorway. These two rings and the half ring are secured in their places by rivets passing through all of them and through the tubes, and uniting all firmly together, the interstices being filled with iron cement. A ring is also placed between the boiler and the air-vessel around the fire doorway, against the outside of which ring the charcoal powder is tightly rammed, and will hold the ring in its place without the necessity of either rivets or screws. That part of the fire doorway which is above the fire bars is supplied with an inner door to shut the fire-place even with the outside of the boiler, and exclude all access of air to the fire, except through the grating. The whole of the fire doorway is enclosed by an outer door even with the outside of the air-vessel, to exclude all air except that which comes through the air-vessel.

A pipe is fixed in the bottom or dish-piece leading to a forcing pump ,to draw the water out of the condenser and force it into the bottom of the boiler through the pipe before described.

A blowing cylinder of about ten times the content of the main cylinder is screwed against the outside of the air-vessel, and opposite the two outlet valves of the blowing cylinder, two apertures are made in the air-vessel, through which the air is forced in.

The main cylinder of the engine of the usual dimensions, according to power wanted, is also screwed against the outside of the air-vessel, high enough above the blowing cylinder to allow room for the main crank shaft to work between them.

The forcing pump before mentioned is also screwed to the outside of the air-vessel, and thus my improved steam engine becomes more compact and convenient than any preceding steam engine.

For the purpose of supplying the boiler with distilled water in case there should be a deficiency in it, a small vessel made of two upright tubes, one within the other, is placed on the cap-piece, the inner tube is of the same diameter as the flue, and forms a continuation of it, the outer tube is about six inches larger than the inner, and the space at the top and bottom between the two tubes is closed by two ring-shaped pieces. This vessel may be about eighteen inches high; a cock is fixed in the top of this vessel to which a bent pipe is fastened, leading to and united with a pipe which arises from the top of the condenser, and passes through a hole in the cap-piece, and thus a communication between the supplying vessel and the condenser may be opened or shut at pleasure. Another pipe also furnished with a stop-cock arises from the vessel, and communicates with a water cistern, to receive its supply of water when required. A third pipe, having a cock in it, opens into the vessel near the bottom, to let out the sediment; a small cock to let the air out is also fixed in the top of the vessel, which cock may also be used for letting air out of the condenser.

In order to supply the boiler with water, by means of this vessel, the stop-cock leading to the condenser is shut, and that leading to the cistern is opened, and at the same time the air cock is opened to allow the air to escape, that the water may fill the vessel. When the vessel is nearly full of water, the air-cock and the cock from the cistern are shut, and that in the pipe leading to the condenser is opened: the water being then heated by the flue, is converted into steam, which passing into the condenser is there reduced to water again, leaving the sediment or salt in the supplying vessel, which sediment or salt may be occasionally blown out through the bottom pipe by filling the vessel with water, shutting the water, steam, and air cocks, and opening the cock of the outlet pipe at a time when the steam in the vessel is strong.

But the supply of water from the condenser being always equal to that converted into steam and used in the engine, there is no tendency to a variation in the height of the water in the boiler, except there be leakage or waste of steam in some part of the engine. An upright glass tube, having an iron tube of communication with the lower part of the boiler, and another iron tube of communication to the upper part of the boiler, is conveniently placed against the outside of the air-vessel, to indicate at all times the height of the water in the boiler, as is usual in steam-boilers. A valve is placed on the top of the air-vessel, to allow of the escape of a portion of the air in case that the quality of the fuel should not require so much air for perfect combustion as the steam requires for good condensation. The degree of the condensation of the steam may be increased at pleasure, by increasing the velocity of the air passing into and through the air-vessel.

The other parts of my improved steam engine, such as the steam-pipes, the throttle valve, the safety valve, the vacuum valve, the working valves, crank, connecting rods, cross heads, pistons, piston rods, and various other minor parts common to engines in general use, may be made in the usual forms and placed in the most convenient situations. They cannot therefore need any description.

When it is intended to use water for condensing instead of air, my improved steam engine must be made as before described, except that the communication between the air-vessel and the fire-place must be closed, which may be done by a perfect ring of iron surrounding the opening leading to the fire-place, instead of the half ring before described, and a forcing pump must be employed to draw water from a reservoir, and force it into the vessel, which I have hereinbefore denominated the air-vessel, but which, in this mode of working, would more properly bear the name of water-vessel. In this case a blowing cylinder, the dimensions of which must be calculated according to the quality of the fuel to be used, may be worked to blow the fire through a pipe leading into the ash-pit. This however will not be necessary where there is a chimney high enough to create a strong draft.

In respect to proportions, my improved steam engine admits of considerable latitude, and it will be sufficient direction to any practical engineer to say, that for engines working with steam of 120 pounds to the inch, used expansively till it be nearly reduced to atmospheric strength and then condensed, a ten horse engine may have a fire-place of twenty inches diameter, the flue at the top ten inches diameter, and a boiler of ten feet high; a sixty horse engine, a fire-place of thirty-six inches diameter, a flue of sixteen inches diameter, and a boiler of twenty feet high.

In boat engines, and in other cases where height cannot be allowed, the diameter must be increased. The thickness of the two tubes constituting the boiler sides of a ten horse engine, may be one eighth of an inch. That of a sixty horse, a quarter of an inch, and so in proportion for engines of other power. The tubes constituting the condenser, and inner tube of the air-vessel, may in all cases be an eighth of an inch thick. The outer tube may be three-eighths of an inch thick to afford stability to the working cylinder, the blowing cylinder, and the forcing pump fastened to this tube, and as an ultimate perfect barrier against explosion.

The respective distances of the other tubes, constituting the outside of the boiler, the condenser and air-vessel, will be the same as hereinbefore given, and therefore their diameters will depend upon the diameter of the fire-place; the cap-piece in small engines may be half an inch thick, and in large engines an inch. The bottom of the ash-pit and bottom of the boiler must have about half an inch of thickness for every foot of diameter, or they may be cast with ribs to afford equivalent strength.

The fuel is supplied through a door in the flue at the top of the boiler, consisting of coke or coals, the least liable to swell with heat. The flue may be filled to about one-third of the height of the boiler, and the water fill about three-fourths of the boiler, leaving one-fourth for steam.

Having clearly explained my improved steam engine, so that any person competent to make a steam engine, can, from the description, understand my invention, and carry the same into effect in as beneficial a manner as myself, I proceed to observe, that the extreme safety of my improved steam engine will be seen from considering that in case the boiler should explode inwards into the flue, the power of the steam would be first reduced by filling the flue and fire-place, and could not escape through the chimney and fire doorway faster than it would diffuse itself and be condensed by mixing with the surrounding air, and thus lose all its force. But should the outside of the boiler burst, part of the force of the steam would be spent in filling up the interstices between the particles of the charcoal, and would then probably be too weak to effect a breach through the inner tube of the air-vessel, and should such a second breach be effected, the space within the air-vessel would allow the steam to expand and partly condense, and a portion to escape into and through the fire doorway, where it would divide itself, and proceed harmlessly up the flue and out at the doorway, so that the outer case being a reserve of strength would to acertainty withstand force remaining in the steam after the ,before mentioned successive reductions of power.

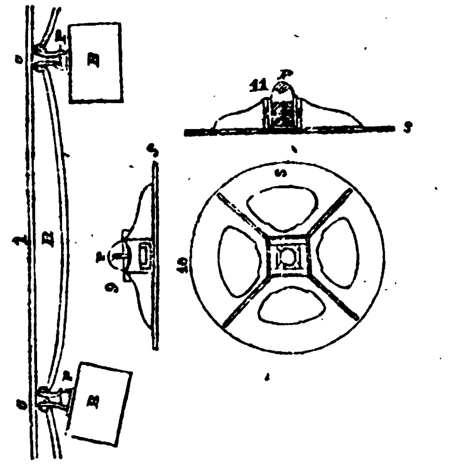
In witness whereof, &c.

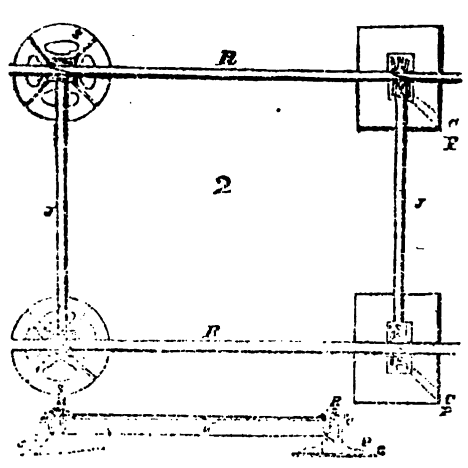
Specification of the Patent granted to WILLIAM JESSOP, *of Butler Hall, in the County of Derby, Esquire, for certain Improvements in constructing Railways.* Dated June 1, 1833. [From the Repertory of Patent Inventions.]

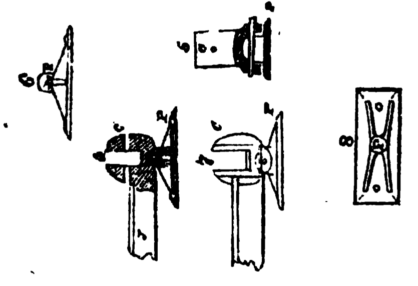
To all to whom these presents shall come, &c.—*Now know ye*, that in compliance with the said proviso, I, the said William Jessop, do hereby declare the nature of my said invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following description thereof, reference being had to the drawing hereunto annexed, and to the figures and letters marked thereon: that is to say,

My invention relates to the manner of constructing the chairs in which the rails are fixed, that is, in place of the usual mode of fixing and supporting the chair upon a stone block, wood, or other sleeper, the chair is made distinct from the pedestal which is attached to the stone block, wood, or other sleeper, and the chair and pedestal are connected by a universal joint or hinge, which permits the pedestal to adapt itself to any irregular sinking of the block or other support upon which it rests, and insures a firm and solid bearing on its base; or this may be effected by the combined motion of a hinge-joint, or other means, permitting motion between the pedestal and chair, and a moveable joint formed at the junction of the chair and rail, so as to produce the same effect, and thereby answer the purpose of a universal joint.

DESCRIPTION OF THE DRAWING.—For the better understanding the improvements, I will now describe the drawing which represents several simple methods of constructing the universal joint, although it may be effected by other means familiar to the practical mechanic. R R are the rails. C C, the chairs. P P, the pedestals; and B B, the blocks or sleepers. J J are junction bars of cast or wrought iron, by which the opposite chairs are connected together, and the rails are thereby held parallel to each other, and at a proper distance apart, and are also retained in a suitable position to insure a flat bearing on the surfaces of the rails for the wheels to travel upon. S S are cast iron bed-plates or sleepers, which may be used to support the rails where stone is expensive, so constructed that the pedestal may be readily adjusted, by the introduction of a wedge or packing to a proper level, without disturbing the seat which the bed-plates may have acquired on the ground; the same method of construction being applicable to the pedestals, when they are attached to stone blocks.







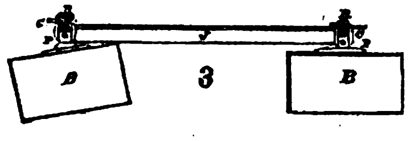


Fig. 1 is a side view of the railway.

Fig 2, the plan.

Fig. 3, the cross section; two of the stone blocks B are drawn in an inclined position, to show the action of the pedestal.

Figs. 4 and 5 are sections of the pedestal and chair, showing an obicular universal joint, by means of which, the pedestal adapts itself to any irregular sinking of the stone block or other sleeper, whilst the connecting or junction bars retain the rails in their proper gauge, and their opposite surfaces in the same plane or straight line.

Figs. 6, 7, and 8, are other views of the pedestal and chair.

Figs. 9, 10, and 11, are a side view, plan, and section of a cast iron bed-plate, used as a substitute for the stone blocks: showing also the method of adjusting the rails by means of wedges or packings introduced between the bed-plates and the base of the pedestal, which is made to fit in the recess formed on the bed-plate, and secured laterally by means of a wedge or key.

Having now described the nature of my invention, and the manner in which the same is to be performed, I would have it understood that I lay no claim to various parts shown and described, but do hereby confine my claim of invention of improvements in constructing railways, to the using of chairs and pedestals, which are capable of turning or moving an universal or other similar joints, as above described, whereby the railway will not be so liable, as heretofore, to be deranged by the sinking of the blocks or sleepers, whether of stone, wood, iron, or other material.

In witness whereof, &c.

RAILROAD ACCIDENTS.—The late unfortunate accident on the Camden and Amboy railroad has caused many remarks on the danger of railroad travelling.

Although we admit that there may be danger in travelling on railroads at *high* velocities, we still remain of the same opinion, often expressed in this Journal, that the danger is not *as* great on railroads as on steamboats, at least at equal velocities. We are desirous however, to do all in our power to prevent accidents in either case, and therefore, it is with great pleasure that we lay before our readers the following communication from E. L. MILLER, Esq., a gentleman of much experience and reflection upon the subject of railroads and steam engines.

Danger of Travelling on Railroads. By E. L. MILLER. [For the American Railroad Journal.]

Since the late fatal accident on the Camden and Amboy railroad, the danger of this mode of travelling has become a common topic of conversation, and a subject of frequent remark, in our public journals, and the inquiry from all quarters appears to be, is there no way of preventing the recurrence of similar accidents?

In the few remarks I propose to make on the subject, I have not the vanity to expect that I can offer any suggestions which may produce this desirable result; the most that I hope to effect, is to call the attention of those who have the more immediate superintendance of these works, to some mode of obviating the danger, if, as I believe, this desideratum be attainable.

Fortunately passengers travelling by this improved mode of conveyance are almost wholly exempt from the danger arising from the explosion of steam boilers; not that the boiler of a locomotive is less liable to explode, than the boilers of other engines, but the small quantity of water it contains, and the distance that the passengers are removed from the boiler, render them in a great measure secure from this source of danger.

The principal danger to be apprehended arises from the breaking of either the wheels or the axles, from obstructions on the road, or from passing the turnouts, and it must be very obvious that the danger in all these cases must be increased in proportion to the velocity. I have never been an advocate for travelling at a very high speed upon railroads, and believe that all their useful purposes may be as fully attained by a speed of twelve or fourteen miles per hour, as by the more dangerous one of twenty or thirty.

With regard to the wheels and axles, I have little doubt but a due attention to their construction would obviate most of the danger. Since the outside bearing on the axles has been adopted, in order to save friction, it has been common to reduce this part of the axle to an inch and a half, or an inch and three quarters in diameter. This would doubtless be sufficient if we could always be sure of the best quality of iron, and a perfect exemption from flaws, but as we can never be sure of these, would it not be advisable to sacrifice a little power to the increased resistance, and make the bearings of the axles $2\frac{1}{4}$ or $2\frac{1}{2}$ inches in diameter? If this were done, and the axle, faggoted from the very best quality of iron, they would possess so much extra strength, as to render them *perfectly safe* under all circumstances, provided due attention were paid to keep them oiled.

With regard to the wheels, *cast iron should never in any case be used for passenger cars.* The altogether wrought iron wheels is doubtless the most safe. Next to this is the wooden wheel, with wrought iron rims, similar to those used on the Liverpool road, and adopted on the Camden and Amboy railroad. An interesting experiment is now being made on the Trenton road, of a new kind of wheel made of gun-metal, which is thought to possess so much tenacity as to render it safe from the danger of breaking, and if the abrasion is not too great, must be a very valuable improvement in wheels for railroad carriages.

The danger from obstructions in the road is in a great measure obviated by the guards which have been adopted on most of the engines, and as regards the turnouts, the only security lies in passing them at a very moderate speed.

Now, as it is well understood by those familiar with the subject, that the danger lies not in the simple act of the car getting off the road, but from its being forced on in this situation by the momentum of the train, and the power of the engine, until the car is literally broken to fragments, and the lives of the passengers endangered, I would suggest to those having the management of railroads, that much of the danger to be apprehended in such cases might be obviated, provided some plan could be devised for attaching the cars to the engine, and to each other, which when the resistance became increased in a certain ratio beyond that required to start or keep them in motion on the road, the car to which any accident might occur, should be self-detached from those which preceded it. This idea has been suggested to my mind from having witnessed two instances of cars getting off the road. In one of these, the cars were attached to the engine by a rope which broke the moment it met with increased resistance by the car getting off the road, and although this car contained thirty passengers, no injury was sustained except the breaking of the car. In this case I have not the least doubt that had the attachment of the cars to the engine been permanent, the car which was off the road would have been dragged on by the momentum, and the power of the engine, until it had been entirely broken to pieces, and most of the passengers killed or maimed.

The other instance to which I refer occurred under similar circumstances, with this exception, that the attachment of the cars to the engine was more permanent, and the result much more disastrous, the carriage being entirely destroyed, and several of the passengers maimed for life.

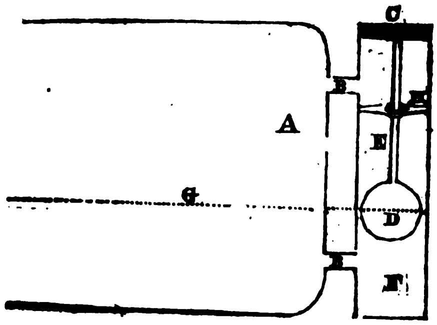
To obtain this important desideratum in attaching the cars to each other and to the engine, I have thought that a spring might be used which should operate so as to detach itself whenever the power of traction was increased to a certain point; the strength of the spring to be graduated in proportion to the working resistance, those next the engine being the strongest, and thus having a proportionate decrease of strength, to the end of the train. The importance of rendering this mode of conveyance, as safe as it is expeditious and convenient will, I have no doubt, call forth and enlist in its accomplishment the mechanical talent of the country, and it would afford me the highest gratification, if I could flatter myself that the suggestions I have here offered should in the smallest degree contribute to this desirable result.

E. L. MILLER.

New-York, November 20, 1833.

[*From the Mechanics' Magazine.*]

STEAMBOAT SAFETY APPARATUS.—That the explosion of steam boilers often arises from an insufficiency of water therein is a fact too well established to admit of a doubt. Much ingenuity has been displayed in the various methods that have been suggested for giving early notice to the engineer and firemen whenever the water gets too low in a boiler. A sketch of a plan has been handed in to us by Mr. E. White, of this city: we submit it for the consideration of those more competent to decide on its merits and practicability than we pretend to be. Its cheapness and simplicity of structure are strong recommendations in its favor. This apparatus, denominated a *Tell-tale*, consists of a sheet iron or copper pipe, of about two to three inches diameter, marked in the drawing, F, closed at both ends, and attached in an upright position to the head of the boiler, A, and communicating therewith by the lateral connecting pipes, B B. The upright pipe having within it a floating metal ball, D, to which the valve rod E is attached. On the end of this rod is formed a papal valve, having its seat in the under side of the head of the pipe at C. H is a guide to keep the rod in its true position. It is apparent that the water in the pipe will always be on a level with that in the boiler, and that as long as the water in the boiler is kept to the water line G, the floating ball will prevent the valve rod from leaving its seat, but, on a fall of the water below a certain line, will also cause the float to fall, by which the valve will be opened, and the escape of steam will address itself to the *ears* of those intrusted with its management.

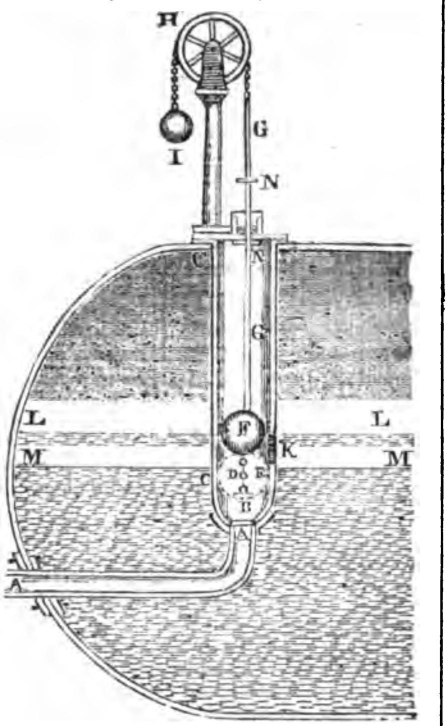


At the Franklin Institute, in Philadelphia, experiments are making, under the superintendance of Mr. Johnson, (who was appointed by a vote of Congress,) to increase the safety and certainty of steam boilers. All that is known at present of the result of their labors will be found at page 30, Vol. II, of this Magazine. Every friend of humanity must most heartily wish that their exertions may be successful, and if any of the suggestions on the subject elicited from our correspondents, now or at any future time, should in any way be of use to them, we shall be gratified; in the mean time we would call the attention of some of our legislators to the following fact:

"In England, every boiler of a steamboat is required by law to be tested quarterly, at three times the strength it is licensed to use. The safety valve is inaccessible to all except the officers of the government. Mark the result—since the regulation was adopted, *not a steamboat explosion has happened.*"

We have in the pages of this Magazine alluded more than once to this subject; descriptions and drawings of other plans will be found at page 153, Vol. I, and at pages 12 and 20 of Vol. II. It is occupying the attention of scientific persons of all descriptions. As it is a matter of the first importance, we shall introduce several other suggestions which have come under our notice; the first we extract from the London Mechanics' Magazine of May last.

"SIR,—The above sketch exhibits a plan of an apparatus for the supplying of high-pressure steam boilers with the necessary quantity of water, a desideratum which has for a considerable period occupied the attention of the scientific world. It is not my intention to place this before the public as a scheme not likely to be improved upon, but merely to contribute, as far as my abilities will allow, to the accomplishment of an arrangement in the economy of the steam engine, which is admitted by all to be of paramount importance.



"A represents the feeding pipe coming from the small water pump of the engine, which is made without a discharge valve. B, a valve placed at the bottom of the small cylinder, C, answering to the discharge valve of the small water pump (before mentioned.) C, a cylinder, having the valve B ground into the bottom of it, and to which is attached the pipe A. D, a chain connecting the valve B with the metal ball F. E, a dotted circle, which represents the ball F when the water in the boiler is low. F, a metal ball shown in the position of the boiler being full; this ball is suspended to a thin rod, passing through the stuffing box in the top of the cylinder. G, a slender rod, to which the ball F is attached, and which has a small chain or cord passing over the pulley H to the counter-balance I. H, a pulley, and I, the counter-balance, to which the ball F and valve B are suspended. K, an oblong hole, about two inches long and one broad, to allow the water to pass from the cylinder C into the boiler. L, the high water line, and M, the low water line, within the boiler. N N, two keys, to prevent the rod going too high or descending too low within the cylinder.

"The action is as follows: The small water pump is continually at work from the engine; but, as the apparatus now stands, there will be a free communication between the boiler and the cylinder of the pump; therefore, each time the piston ascends, instead of the water rising from the well, a quantity will proceed from the boiler through the valve B, and back again into the boiler with the descent of the piston; nor will the water ever increase upon the boiler till it shall have evaporated down to the line M, when the ball F will descend to the dotted circle E, on which the valve B will fall into its seat, and act as the discharge valve to the small pump, until the water shall have risen high enough to float the metal ball F to its present position, when its action will cease. To adjust the counter-balance to the ball F, it should be of equal weight, subtracting the weight of an equal bulk of water, and the pressure of the steam upon the area of the rod G. The oblong hole is limited to the difference of the height of the water in the boiler.

"Yours, &c. E. F. W."

We have another plan, with an engraving, from the West-Point Foundry, which we are compelled to omit, in consequence of having lost part of the description. It will be given in our next.

The following suggestion we copy from the New-York Commercial Advertiser:

"Let three bells be suspended in the boiler, of different tones, at different elevations—let a wire or rod pass through each head of the boiler, and after a convenient number of revolutions of the water-wheels, be made to twitch sufficiently to ring all the bells—the height of the water would be indicated by the sound of each bell—the highest bell should be above the surface of the water when the proper quantity is in the boiler—the sound of this, in such case, would always be clear; and if too much water in the boiler, the sound would be deadened, because the bell would be covered with water; and when the water was too low, that and the next bell below would sound clear; and if then it should be found that the supply-pump or pipe were out of order, the fire should be dropped out of the grate. This may be effected by constructing the grate so that it would be suspended on one side upon joints or hinges, and sustained on the other side by chains attached to a lever, which could be released or let go in an instant, and all the fuel thus dropped into the water without a moment's delay.

"It is obvious that all the passengers would be apprised of the danger, and the engineer put up to attention."

From the Rockland Advertiser, we copy the following pertinent remarks of Mr. Wm. Jones, of Haverstraw:

"To prevent explosions, nothing more is necessary than to have proper *safety-valves* to regulate the pressure of steam the engine should work at, and regulate the water in the boilers, which should be done as follows—

"In the first place, no condensing engine should be allowed to carry more steam than 14 pounds to the inch, and should be regulated to this by having *two safety-valves* to each boiler, independent of the one of which the engineer has the care. These two valves should be weighted properly, as above named, *inside the boiler*, and may be put at a little distance from each other, over which a cast or wrought iron box, pierced with sufficient holes, of about an inch in diameter, to allow the steam to escape, should be screwed on to the boiler *with the nuts inside*, so that they could not be got at by any person except when the boilers are not in use. The reason why *two* safety-valves should be used is, that something may cause one not to act, although in upwards of twenty-five years' practice I have never known such a thing to occur. The steam-gauge should likewise be put in the most conspicuous place for the engineer and engine-tender to see at what pressure the steam is in the boilers, in case something may cause the valves to be inactive, which is almost impossible.

"It is also necessary that the water in the boilers should be regulated, so that the engineer and engine tender should know when there is too little in them, as many boilers have burst for want of a proper quantity. To prevent this, a valve should be placed on all boilers with *a float inside*, which will follow the water as it fluctuates. In this valve a whistle should be placed, that will give notice the moment the water is getting too low in the boiler, so that the engineer and all persons belonging to the boat will know the water is getting short, as it will continue whistling till the water gets to its proper quantity.

"Many persons may say, all boilers have safety-valves, and cocks to regulate the water in the boiler. I admit it. In the first place, however, the safety-valve on the top is a lever, exposed to the engine-tender or any other person, who may go and remove the weight to any place he chooses, which I have seen done to crowd the engine with steam to no purpose except a bad one; and at a time when the piston has wanted packing, or the air pump, and at times when the valves have not worked regularly. In the next place, there are cocks to tell the height of the water. These cocks will not tell when the water is too low, without the aid of the engineer or engine-tender; nothing in this case can be equal to a self-acting machine. The whistle at all times will give notice of the water being too low, and the safety-valves blow off the steam when there is too much, when landing passengers, and at all times when there is too great a pressure in the boilers. In fact, no engine is complete without them; and it would be well for the Legislature to take cognizance of the subject, and pass a law, notpermitting any boat to go on the water, unless fitted with these two means of safety. These two things being done, which would cost but a few dollars, would prevent the dreadful accidents that have of late so often happened, and save a great number of lives."

AGRICULTURE, &c.

[*From the New-York Farmer.*]

American Wine: *Power of Knowledge.*—Mr. Sidney Weller, in a communication to the American Farmer, gives his testimony in favor of agricultural information derived from reading. He speaks frankly, not egotistically.

In making wine, this season, I used for mashing the grapes such rollers as are described by Mr. Herbemont, and that they have fully answered the purpose he named. And I will state too, that my grapes being fully ripe and some partly shrivelled, the must, when I came to taste its strength with an egg, was found sufficiently strong to make wine without the addition of either sugar or brandy. I have no doubt of its keeping if due care be taken; for some I made in the same way, more than three years since, is now good wine, or pronounced such by competent judges.

Nearly four years since I removed to my present residence,—and with very narrow resources, commenced improving my three hundred acres of nearly worn out land. Not to mention the cost and trouble of fencing and other repairs of a common kind on a farm in a state of dilapidation, I pursued a regular system of manuring, by hauling straw, pine and other leaves, into my yards and lots, and having my trash pens and other receptacles for making manure. Some, who thought my labors almost lost, seeing barren fields thereby made to produce good cotton and corn, now adopt the same plan, and consider it less trouble to make poor land productive by manure, than to clear new timbered tracts after the old syetem.

Some have now changed their opinion, who formerly considered me a visionary man, about to ruin my affairs, because I went to the expense and trouble of buying and sowing grass seeds, made cross fences, and took my cattle out of the woods to turn them into fields, and because I fed my calves milk and gruel in pasture lots, instead of letting them remain with their dams; and not to mention new instruments of husbandry, such as harrows, rollers, skimmers, &c. because I ploughed hilly ground horizontally, and planted corn in drills; seeing my grapes flourish, my cattle thrive, and that two or three of my cows afford more milk and butter than a dozen or two of theirs, and that my calves bid fair to become superior cattle, and that my grounds produce more, and washing is prevented by the horizontal and drill system.

But my attempts to rear a vineyard at first excited here the greatest incredulity. But few attempts of the kind have been made in this state, and if I have been informed correctly, none of consequence in the county of Halifax. And yet a county, I believe, as to soil and climate, as well calculated for success in rearing the vine as any in the Union. Some thought it impracticable, on my poor land, to make vines flourish at all; and again, if the vines could be reared, the business would be unprofitable, and if entered into any way largely, would ruin even a man of capital.

And indeed the expense of hiring, connected with this and other improvements, brought me into debt and some embarrassment. And I know not the consequence, had not Providence, who uniformly favors all laboring to avail of and make his own nature's works valuable to man, afforded me a substantial friend, in my neighbor, Gov. G. H. Burton, a gentleman of enlarged benevolence, extensive information and liberal views—for taking me by the hand, purchasing my rooted vines, and liberally rewarding me for superintending the rearing of a vineyard for him, he shared with me some of the illiberal remarks incurred by the new, and here untried, undertaking. But, incredulity is beginning to give place to faith, in view of the rapid growth and promising condition of our vineyards. And many that were incredulous, think now that rearing the vine will eventually be a profitable business; knowing that, independent of the expected profit of wine making, I have sold rooted vines these two years to some amount, and that (with a fair prospect of selling,) I will have a considerable number of Scuppernong and other choice kinds of rooted vines to be disposed of this fall, or next spring.

Here I remark, that at every step of my efforts to attain agricultural improvements, I have been more convinced, that emphatically, in agriculture, *knowledge* is, when judiciously applied, *power*; or, that the more correct and enlarged the *theory* or *science* in this business the more efficacious and eventually profitable the *practice*. And here I must acknowledge myself greatly indebted to the pages of the "American Farmer": from which *pioneer* of agricultural periodicals, I have been constantly receiving important hints and directions. I heartily accord with Mr. Smith, (late editor of the "Farmer,") in his valedictory, that the agriculturist, as well in these as in other important pursuits of life, should read much on the subject of his business. But to persuade most agriculturists to accord practically with this sentiment is a difficult task. Some, indeed, I know, look upon the agricultural periodicals of the day as a sort of newly arisen *catch pennies* to gull them out of money.

Profits of Farming.—It is often the case that men in mercantile, manufacturing, and mechanical pursuits, are reputed to be worth much more property than they really possess. We fully believe that extensive statistical information on the relative wealth of merchants and farmers would show results favorable to the latter. The following is from the Poughkeepsie Journal.

Mr. Editor,—The business of farming is often considered less profitable than other business; and the reason is, that the income of the farm is not truly estimated. If the entire revenue of a well regulated farm were estimated, we should find the per cent. on the property not less than that of any property, that is equally safe.

My neighbor B. came to me the other day, quite discouraged on account of the small profits of farming compared with other business. Now, as I knew my neighbor to be a good farmer, and a pretty correct calculator, I attempted to convince him, from his own statements, that he is enjoying a very fair per cent. from his farm. He has a small well-improved farm, which, two years ago, was bought for $7,500; since which he has built a house that cost $1000, which, with his entire stock, &c. makes his property worth $10,000. From this my neighbor complained, that he realizes only a few hundred dollars, not more than — per cent.

But there are many things not counted which ought to be reckoned as part of his income. His house, as I said, though not necessary to the business of farming, besides the one he already had, yet agreeing well with the circumstances of his family, may be considered as yielding at least $60. Besides the team, waggons, &c. necessary for his farm, he keeps a good pair of horses and pleasure-waggon, because, you know, his wife and daughters must ride in a style that is agreeable to their circumstances and standing in society. The value of these, counting it equal to the expense, is not less than $140 per annum. And of wood, my neighbor tells me he burns more than 30 cords, which at $3 per cord is $90. Then, his garden, orchard, and fruit yard, for all these are managed in the best manner, yield him the value of $80, including his cider, &c. In addition to these we might mention the veal, the poultry, and the eggs, and the fine piece of mutton that he has now and then; for, as the Irish lord says, "he lives on his own estate and kills his own mutton." All these, though not generally estimated, are a part of the income of his farm. So here is more than $370, in addition to the four hundred which he acknowledges to have received in cash as the clear income of his farm. It is true that this is for the comforts, &c. of my neighbor's family, but such as they require, and such as, in any other business, would cost the cash. My neighbor was satisfied. And I am persuaded, Mr. Editor, that a careful examination of *facts* would lead to conclusions very favorable to agriculture. And your readers would welcome a statement of these conclusions in your paper.

Arithmos.

Ploughing with Three Oxen.—The following, from the Genesee Farmer, appears worthy the notice of those farmers who work oxen. Mr. Lacy, the writer, is spoken of as a good and thorough-going farmer.

Believing it to be the duty of every member of community to lend his aid, however feeble, in maturing and suggesting new and useful improvements, (by which means all arts and sciences have by degrees attained their present state of perfection,) induces me to communicate at this time the successful result of an experiment in the use of three oxen abreast in ploughing, which team may be drove by the man holding the plough, and the draft being apportioned to each ox equally, by means of a whipple-tree, they are not subject to unequal pulling as two yoke, from unskilful and violent driving, and lose no power by pulling from the tops of the neck, or of one yoke being removed too far from the plough, which increases the burden of the hind yoke, without any benefit to the business.

I put one pair of oxen in a common yoke, and the third ox in a single yoke made quite crooked. To the end of the double yoke I attach by a staple a chain of three or four links and a hook. To the end of the single yoke, also, a chain of about twenty inches in length is attached, of the size of a common trace chain, which is quite sufficient to unite the team.

The singe ox draws in traces hitched from the underside of the yoke to a short whipple-tree, attached to the long end of a three ox whipple-tree, which may be shorter than is used for horses.

I have a plough constructed purposely for this team by Kellum & Bingham, of Wheatland, in such a manner as to answer for two or three oxen. For three oxen the pitch should be taken entirely out by means of a key to raise the beam tenon in the plough handle, the mortice being wider than the tenon, and to set the plough on or off the land, the mortice in the beam through which the sheath passes should admit of a wedge an inch thick by the side of the sheath, by means of which the plough may be set to or from the land; in consequence of the wide mortice, an iron key through the sheath will be required.

Whoever may be induced to use a three ox team will find after a short trial that they work pleasantly, and perform the amount of labor full equal to two yoke in the common way with a skilful driver. Allen T. Lacy.

Chili, Oct. 10, 1833.

Price of Farms.—It is very evident that landed property is advanced in price by the general prosperity of the country, and from speculation. We caution farmers, however, not to come under the influence of the land mania. A few weeks ago Mrs. Parmentier's garden, of 23 acres, was purchased for $57,000. It has since been sold in building lots, at, we understand, an advance of 25 per cent. Perhaps the following are similar purchases:

We last week mentioned the sale of the Thompson farm at 80 dollars the acre. We understand the purchaser has already been offered and refused *twenty-five hundred dollars* for his bargain.

A farm, one mile from Norristown, Penn., of 145 acres, was sold on the 17th ult. for $152 per acre. The purchaser has since refused $5000 for his bargain. Norristown is a small village, situated on the Schuylkill river, 17 miles from Philadelphia.—[Poughkeepsie Journal.]

Several acres of woodland at Valley Grove, three miles from Brooklyn, adjoining the turnpike, were lately sold by G. L. Martense, at five hundred dollars per acre. Two acres, owned by Mr. M. Clarkson, in the same neighborhood, three and a half miles from the ferry, sold for one thousand dollars per acre.—[Brooklyn Star.]

Cocoons to the Pound.—At page 339 it is stated that 1000 balls of good cocoons will make one pound of twisted silk. In a recent conversation with Mr. Brooks, he states that his estimate was too small, a pound requiring from 1500 to 2000. The last number, however, was the basis of our calculation. The price, too, was stated to be three dollars per bushel. Those of very good quality will command four dollars.

Saxony Sheep.—By the following we perceive our correspondent, "a Native of Saxony," has made a sale to the Hon. Henry Clay. We take this opportunity to request Mr. G. to remember us during these long evenings.

Mr. Grove, an extensive wool grower in the town of Hoosick, has a flock of fine Saxony sheep, of superior blood and quality. Henry Clay, becoming familiar with their merit, made application to Mr. G. for a few to improve his stock. *Fifteen* have consequently been sent. They were shipped at this city for Baltimore last week.—[Troy Press.]

Florida Oranges.—We learn that Florida Oranges are in unusual demand in the northern markets. So great has been the desire to obtain them, that already one half the crop on the St. Johns has been taken away. The crop at St. Augustine probably amounts to 2,000,000, and are ripening very fast, and will be fit for market soon.

The superiority of the Florida Oranges over those of foreign growth is fully admitted, and it only needs a little more attention and enterprize to supercede the use of the former altogether.—[Florida Herald.]

Remarks.—Florida Oranges retail in the streets of New-York at 25 cents per dozen. They are not considered quite as sweet as those from tropical climes, but have a fresh appearance and pleasant flavor.—[Ed. N. Y. F.]

Orchard Grass.—The graziers of the valley pronounce it more nutricious than either Timothy, Clover, or Herds Grass, and it is by uniting this grass with the two first that the proverbially fine pastures and meadows of the central counties of Pennsylvania are found. It resists the heat of our summers, and recovers from the effects of the hoof and the tooth very rapidly. For seed lots two bushels should be sowed to the acre; and for the scythe, or for pasture, the mixture should be one bushel of orchard grass and one gallon of timothy seed, over which a gallon of clover should be scattered in March.—[Kanawha Banner.]

Capt. Riley, so well known to the public by the account of his sufferings while a captive among the Arabs of the African desert, as well as for his benevolent character, has recently returned from a voyage to Mogadore, and presented to the American Colonization Society *twelve bushels of Barbary wheat*, in hopes that it may be better adapted to the soil of Liberia than the grain of this country. This wheat is thought the best in the world, and flourishes in a climate where frosts are never known. Should it suit the Liberia climate, it must prove a most valuable grain for the colony.

The First Wheat in New Zealand.—The difficulty of introducing the greatest improvements among people who need them most, is prettily illustrated by Williams' account (in the vegetable world), of the manner in which wheat was first cultivated in New-Zealand by a native chief who had visited the English settlements in New-Holland. On leaving Port Jackson the second time, to return home, he took with him a quantity of it, and much surprized his acquaintances by informing them that this was the very substance of which the Europeans made biscuit, such as they had seen and eaten on board of their ships. He gave a portion of it to several persons, all of whom put it into the ground, and it grew well; but before it was well ripe, many of them were impatient for the produce; and, as they expected to find the grain at the roots of the stems, similar to their potatoes, they examined them, and finding no wheat under the ground, all except one pulled it up and burned it.

The chiefs ridiculed Duaterra about the wheat, and all he urged would not convince them that wheat would make bread. His own crops and that of his uncle, who had allowed the grain to remain, came in time to perfection, and were reaped and threshed; and, though the natives were much astonished to find that the grain was produced at the top, and not at the bottom of the stem, yet still they could not be persuaded that bread could be made of it.

A friend afterwards sent Duaterra a steel mill to grind his wheat, which he received with no little joy. He soon set to work before his countrymen, ground some wheat, and they danced and shouted with delight when they saw the meal. He afterwards made a cake, and baked it in a frying-pan, and gave it to the people to eat, which fully satisfied them of the assertions. From this time there was of course no difficulty in making the culture a fashionable one.—[Poulson's Daily Advertiser.]

Elephants for Ploughing.—Elephants are now used in Ceylon for ploughing the rice fields, and in preparing new ground for the cultivation of coffee, pepper, &c. An elephant will perform the work in one day which twenty bullocks were in the habit of performing before. In a country like Ceylon, which is very thinly inhabited, by this system of employing Elephants, much time is saved, and a great deal of agricultural work performed. An Elephant may be purchased in Ceylon at any time for 10 or £15.

Culture of Potatoes.—A frequent change of seed is necessary. Any sort may be continued fertile and profitable by removing them from one county to another every fourth or fifth year, or by raising them alternately on very different descriptions of soil. In the cultivation of this useful plant, it appears from many experiments that it requires ample space. In field culture, placing the sets of the strong growing kinds in every third furrow, and those of the dwarfer sorts in every second, are eligible distances. There are different opinions held respecting the necessity of earthing up potatoes. On very thin soils, however, it is absolutely necessary. On deeply ploughed, or trenched ground, earthing up the stems is certainly less necessary, because as the under ground runners, which produce the tubers, are inclined to extend themselves as deeply in the soil as the roots, they do not seem to require any additional depth of earth immediately over them. But this depends entirely upon the open porousness of the soil, and the manner of growth of some of the kinds. Plucking off the flowers increases the size and number of tubers. It is founded on a law of nature, disposing a plant, constituted to produce at the same time both seeds and tubers, to yield either one or the other more abundantly, according as either is destroyed. If tubers be not allowed to form, many flowers and apples will be the consequence; and if the flowers be destroyed as soon as they appear, the tubes will be increased. It is bad management to plant the refuse, or odds and ends of last year's crop, for the sets of this. If potatoes are planted at all, they should be planted well.—[Br. Far. Mag.]

Observations on transplanting Trees.—As success in transplanting trees depends much on the treatment they receive in that operation, we have thought it advisable to present a few remarks for the observation of those who have had but little experience on the subject. On removing trees from the nursery, care should be taken to prevent the roots from dying previously to planting them, otherwise they may receive considerable injury, and in executing our orders for trees, particular care is taken to preserve them from drying winds before packing. Immediately on their receipt the bundles should be unpacked, the roots well watered and "laid in," until the ground in which they are to be planted be ready to receive them. By laying in is to be understood the making of a trench sufficiently large to admit the roots, into which they are placed: the earth having been previously made fine, is then filled in around them, and a gentle watering given, in which situation they may remain with safety until planted. The holes in which it is intended to plant them, should, for an ordinary sized nursery tree, be from 2½ to 3 feet in diameter, and about the same in depth; the earth from the bottom should be thrown aside; and its place filled up with good compost or black mould, (no fresh stable manure should be used in the compost.) The tree should be planted one or two inches deeper than it stood in the nursery; the roots and fibres being spread out horizontally, and during the process of filling in the earth, the tree should be shaken several times, so as to admit the soil between the roots, and also fill up any cavities that might otherwise remain. The earth should then be trodden down and gently watered; in a short time it will have settled, and any hollows that may have formed should be filled up—finishing by forming a basin around the trunk to receive the rain or watering which it may be necessary to give it, if the ensuing season should prove dry; to prevent the winds from loosening the earth around the roots, they should be secured to a stake by bands of straw.

The proper season for transplanting trees in this latitude is from the middle of October until the first or middle of May, during which time they may be safely transported; when they are destined for the south, the autumn and winter months, perhaps, are preferable, but when for this latitude, or northerly, spring and autumn are equally good—evergreens are thought to succeed better when transplanted in the spring; much however depends upon the nature of the soil; if heavy, we would in general prefer the spring. Bulbous and other flowering roots, such as hyacinths, tulips, ranunculus, anemone, crocus, &c. &c. are taken out of the earth in June, from which time to November or December they can be transported without risk.

Green-house plants can be transported by water, and for short distances by land, at almos any season, though the autumn, winter, and spring months are preferable, as they may then be closely packed, and require no attention on the passage.

Waste of Corn in Agriculture.—It is estimated that only one-third of the seed-corn sown on the best land grows; the other two-thirds are destroyed. The number of cultivated acres in Great Britain and Ireland amounts to 47,000,000; 30,000,000 of which are under the plough. Two-fifths of the latter, or 12,000,000 acres, are annually under the cereal crops. The average allowance of seed for the three kinds of corn may be stated at four bushels and two-thirds per acre. The quantity of seed annually sown thus amounts to 7,000,000 quarterly. If two-thirds of this quantity are rendered unproductive by some agency which has hitherto been uncontrolled, then 4,666,666 quarters of corn are annually wasted! The quantity thus lamentably wasted would support more than 1,000,000 of human beings.—[Quarterly Journal of Agriculture.]

RAILROAD MEETINGS.

[From the Long Island Star.]

At a meeting of delegates for the several towns of Suffolk county, held this day, pursuant to notice, at the house of William Griffing, in Riverhead, James Hallock, Esq. of Southold, was appointed chairman, and William F. Blydenburgh, secretary: it was

Resolved, as the sense of this convention, That a railway from Williamsburgh, or Jamaica, through the Island, to Greenport, &c. is both desirable and feasible.

Resolved, That the inhabitants of Kings and Queens counties be invited to appoint delegates to meet delegates from this county, in convention, at the inn of Thomas Hallock, in Smithtown, on the first Tuesday of December next, at 10 o'clock P. M. to concert and adopt measures in reference to a railroad through the Island.

Resolved, That Gilbert Carle, Wm. Wicks, Moses Rolph, Silas Wood, Platt Carle, Josiah Bowers, William F. Blydenburgh, Abraham Smith, George S. Phillips, William N. Mills, J. B. Smith, Richard Blydenburgh, Tredwell O. Scudder, H. W. Vail, Eliphalet Smith, Richard Udall, James H. Weeks, S. B. Strong, R. W. Smith, L. H. Davis, J. M. Williamson, Brewster Woodhull, Charles Osborn, Dr. J. Fanning, George Miller, Noah Youngs, Chapman Davis, Jr., John Clark, 3d, B. S. Wiggins, J. H. Goldsmith, Caleb Dyer, S. S. Gardiner, S. B. Nicoll, John P. Osborn, A. S. Rose, S. T. Griffing, Jonathan S. Conkling, Samuel Miller, B. F. Wells, Israel Fanning, and David Gardiner, be the delegates from Suffolk county to the above convention.

Resolved, That a committee of three be appointed by the chairman, to copy and enclose to the inhabitants of Kings and Queens counties the above resolutions. The chairman having appointed Elijah Terry, Joshua Fanning, and W. F. Blydenburgh, as such committee. it was

Resolved, That the subscriptions for a survey, by a competent engineer, to ascertain the most elegible route for a railroad through the Island be continued.

Resolved, That the above resolutions be signed by the chairman and secretary, and published in all the newspapers printed on the Island.

James Hallock, Chairman.
Wm. F. Blydenburgh, Secretary.

[From the Milledgeville, Geo., Journal.]

Pursuant to appointments of public meetings of the citizens of Savannah and Macon, committees representing such citizens convened in the Senate Chamber on Thursday evening, Nov. 7th 1833, for the purpose of devising such plans as may be most expedient for establishing an internal communication between said cities, and extending to the town of Columbus.

Present from Savannah, John McPherson Berrien, W. W. Gordon, and W. C. Daniell, Esqrs,

From Macon, C. J. McDonald, Henry G. Lamar, Robert A. Beall, Robert Collins, John Rutherford, and Nathan C. Munroe, Esqrs,

The meeting organized by calling Judge Berrien to the Chair, and appointing N. C. Munroe secretary.

The following resolutions were adopted and the meeting adjourned subject to the call of the chairman.

It being important that a survey of the country for the purpose of a canal or railroad communication between the cities of Savannah and Macon, and between Macon and Columbus, be made by a competent Engineer, at as early a period as possible, and the season of the year being that best adapted for the purpose: Resolved, that an application be made by this joint committee to the legislature for the appropriation of the sum of $20,000 to defray the expenses of such survey, and that the necessity of an early appropriation be strongly urged on the legislature, that the contemplated survey may be made before the expiration of the proper season.

Resolved, That a committee be appointed to confer with such gentlemen as are now in attendance at Milledgeville, and who are interested in the contemplated railroads from Augusta to various parts of the interior of the state, for the purpose of reconciling, as far as possible, conflicting interests and views, and to produce a union in such a scheme as will most conduce to the general prosperity of the state.

Resolved, That a committee be appointed to draft a memorial to the legislature for a charter to such persons as may think proper to associate for the purpose of erecting a railroad or canal from the city of Savannah to Macon, and from the latter place to Columbus, and also to prepare a bill to accompany said memorial, and that the same be submitted to this joint committee.

The following gentlemen compose the several committees:

On the first resolution, Messrs. Berrien, Gordon, and Beall.

On the second, Messrs. Berrien, Gordon, McDonald, Lamar, Collins, Rutherford and Munroe.

On the third, Messrs. Lamar, McDonald, and Gordon.

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 5th to the 18th of November, 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Novem. 5..	6 a. m.	29	30.55	NNE—N	moderate		clear
	10	32	30.57	N	light	NNW	fair
	2 p. m.	40	30.53	..	..	..	..
	6	38	30.50	..	..	..	..
	10	35	30.48		..		
" 6..	6 a. m.	35	30.36	WSW	..	W	cloudy
	10	38	30.36	SW by W	..	..	..
	2 p. m.	44	30.27	..	..	..	..
	6	42	30.22	..	..	..	
	10	42	30.20	SW	moderate		fair
" 7..	6 a. m.	41	30.25	..			..
	10	47	30.25	..	light		clear
	2 p. m.	52	30 26	..	..	SSW	fair
	6	51	30.26	S by W	..	W by N	cloudy
	10	50	30.28		..		..
" 8..	6 a. m.	48	30.30	SSW	..	WSW	fair and smoky
	10	54	30.28	..	..	..	.. ..
	2 p. m.	60	30.24	S—SSE	..	W by S	.. ..
	6	58	30.18	SSE	..	..	.. .. —haze at WNW
	10	38	30.15	SW	moderate	..	cloudy
" 9..	6 a. m.	57	29.00	WSW	..	..	..
	10	60	29.95	..	fr'h—strong	..	
	2 p. m.	60	29.80	..	fresh	SW by W	rainy, and clouds brisk by SW by W
	6	59	29.72	..	..	..	cloudy
	10	56	29.69	..	..	..	..
" 10..	6 a. m.	49	30.95	WSW—WNW	light		clear
	10	53	30.00	WNW	moderate		..
	2 p. m.	57	30.01	W—WSW	light		..
	6	52	30.06	WSW	..		..
	10	49	30.11	..	..		..
" 11..	6 a. m.	45	30.17	..	..	W by S	fair
	10	50	30.16	SSW	..	WSW	..
	2 p. m.	58	30.10	S—SSE	..	..	cloudy —rainy
	6	52	30.00	..	..	..	rain
	10	53	29.88	S	..	..	rainy
" 12..	6 a. m.	47	29.71	SW	moderate	..	cloudy
	10	58	29.68	WSW—W	fresh	..	.. —rainy
	2 p. m.	60	29.70	W	gale	..	fair
	6	52	29.82	..	strong		clear
	10	45	29.90	WSW	..		..
" 13..	6 a. m.	41	29.97	..—W by S	moderate		..
	10	46	29.99	W	strong	WNW	fair
	2 p. m.	50	29.98	W—WSW	fresh	..	..
	6	47	29.98	WSW	moderate		clear
	10	45	29.99	..	..		..
" 14..	6 a. m.	42	29.90	SSW	..		..
	10	51	29.85	..—S	..	SW	fair
	2 p. m.	58	29.75	S	fresh	SSW	..
	6	54	29 65	..	moderate	..	..
	10	49	29.58	..	light	..	..
" 15..	6 a. m.	43	29.48	WSW	moderate	..	cloudy
	10	44	29.50		..	..—WSW	rainy —fair
	2 p. m.	47	29.54		fresh	WSW	
	6	44	29.58		..		clear
	10	40	29.69		moderate		..
" 16..	6 a. m.	33	29.77		..	..	fair —clear
	10	39	29.80	SW by W	..	SW	..
	2 p. m.	43	29.79	WSW	fresh	..	fair
	6	36	29.80	..	..	SW by W	..
	10	34	29.84	SW by W	..		..
" 17..	6 a. m.	32	29.84	..	..	..	..
	10	36	29.84	WSW	..	WSW	.. —squally
	2 p. m.	41	29.78	..	modarate	..	..
	6	39	29.76	..	..	..	..
	10	38	29.88	..	..	..	..
" 18..	6 a. m.	35	29.98	SW by W	..		clear
	10	41	30.04	WNW—W	..	NNW	
	2 p. m.	44	30.05	W	..	W	fair
	6	40	30.12	..	..	W by S	..
	10	36	30.18	..	..	WSW	..

NEW-YORK AMERICAN.

NOVEMBER 16, 18, 19, 20, 21, 22—1833.

LITERARY NOTICES.

THE LIFE OF ARCHBISHOP CRANMER, by C. W. LE BAS. 2 vols. New York: J. & J. HARPER.—We are glad to see this continuation of the *Theological Library*, of which these volumes constitute No's 5 and 6 of the series.

The character of Cranmer is one that has been extolled and depreciated immoderately, according to the religious tenets of those who discuss it. The aim of Prof. Le Bas in these volumes—while giving all the material facts in the history of Cranmer, the Primate of three reigns, accompanied by the expression of his own sense of gratitude as a member of the Church of England, to the great founder and champion of that Church, and the early advocate of the general distribution of the Bible in the English tongue to all classes—is to leave to his readers the materials and opportunity of forming their own judgment.—The career of Cranmer, and his dangerous association with Princes, exposed him to great temptations and difficulties; and if he did not always—especially in the matter of the marriages and divorces of that monster of lust and blood, Henry VIII—acquit himself as became a Christian minister; and although on the approach of a painful death, his truth and courage faltered for a while—there was that in his fervor, sincerity and zeal, in the devotion of his life to the great object of his calling—the inculcation of the truth as it is in the Scriptures—and in the courage and calmness of his death, to entitle him to the gratitude and admiration of the whole Protestant world. Of that cruel death we subjoin the story, as it is told by our author:

We now proceed to the consideration of the archbishop's conduct in the closing scene of his eventful life.

The sixth paper of submission was dated on the 18th of March. It contained a prayer for mercy; and the answer to this petition was an order for his almost immediate execution. From the very first it had been determined that he should suffer as a heretic; but his enemies waited awhile, that they might fix upon him the infamy of cowardice and unfaithfulness; and when artifice and temptation had done their worst, the fire was speedily lighted for his destruction. By way of preparation for the solemnity, the provost of Eton College, Dr. Cole, had secret instructions from the queen to prepare a sermon for the occasion; and, lest the feelings of the people should break out into violence and tumult, many of the neighboring gentry and magistrates were assembled in Oxford, with their servants and retainers, to keep the peace and witness the execution. On the 20th of March, the day before he suffered, the archbishop was visited in his prison by Dr. Cole, and interrogated by him, whether he continued firm in the Catholic faith, as he had recently professed it? The answer of Cranmer was somewhat equivocal. He said that, by God's grace, he would be still more confirmed in the *Catholic* faith; a reply which most probably intimated that he had begun to repent of his weakness, and to form a resolution to return to the profession which he had seemingly abandoned. How the interval between that time and the day after was passed by him, we have no certain information; but it is at least likely, that it was employed in preparing the prayer, the exhortation, and the repentant confession of apostacy, which were actually delivered by him immediately before his execution. On the next day, Saturday, the 21st of March, he was again visited by Cole at an early hour, and asked by him whether he was provided with money. Being answered in the negative, Cole supplied him with fifteen crowns; an indirect, but very intelligible mode of apprizing him that he must prepare for death; it being then a sort of funeral custom for persons condemned to die, to distribute alms among the people. This intimation must, in all probability, have dissipated every hope of mercy, and have convinced him that the time was come for publicly abjuring the dissimulation which had wounded his conscience and his fame, without preserving his life. Some time after Cole had retired, the friar Garcina made his appearance in the prison and urgently besought him to transcribe a retraction of his doctrine, to be delivered by him at the stake. It is uncertain whether the document thus tendered to him was the *fifth* of the submissions ascribed to him in Bonner's printed account, but which as we have seen had hitherto been suppressed by the council; or whether (which is the more probable supposition) it was nothing more than the brief revocation of his doctrine respecting the Eucharist, which, in the printed account of his submissions, is called "the saying of Thomas Cranmer. a little before his his death." But however this may be, it appears that Cranmer consented to transcribe it, and thus to leave the friar under the impression that it was his intention to deliver it before the public, when he came to execution. In this, undoubtedly, there was some appearance of deception; but it was an expedient to which he was almost driven by the necessity of the case. He well knew, that if he had *then* rejected the proposed paper, and had apprized Garcina of his design to revoke his former submissions, he never would have been allowed to address the bystanders for that purpose, and would thus have perished under the imputation of impenitent apostacy. But though he consented to transcribe the friar's document, there is no reason whatever to believe that he ever set his name to it; for the seventh paper attributed to him in Bonner's printed statement appears there, unlike the other six, without the signature of *Thomas Cranmer:* although the account affirms that it was written with his own hand. It may therefore be reasonably concluded, that he agreed to transcribe it purely for the purpose of ridding himself of the friar's solicitations, and of thus securing an opportunity of proclaiming his repentance before he died.

The facility afforded him for this public confession was, accidentally, beyond his hopes. Between nine and ten o'clock on the 21st of March, the Lord Williams, with others of the neighboring gentry, arrived in Oxford, for the purpose of presiding at the sacrifice of the reclaimed arch-heretic. The morning, however, happened to be so rainy, that instead of conducting him at once to the stake, they brought him to St. Mary's Church, in the full expectation that he would there complete the triumph of the Romanists, by proclaiming, with his dying breath, his adhesion to their communion. On his way thither he was placed between two friars, whose office it was to murmur out certain psalms, which it was conceived, were appropriate to his mournful situation. On his entrance into the church, the *Nunc Dimittis* was chanted; and the archbishop was then led forward to a scaffolding or platform, raised in front of the pulpit. When he had ascended it he knelt down to pray; and wept so bitterly, that many of the spectators were also moved to tears; more especially those among them "who had conceived an assured hope of his conversion and repentance."

Dr. Cole then commenced his sermon; in which he stated that Dr. Cranmer had been the prime agent in all the pernicious changes by which the realm had been for so many years distracted. He had usurped the office of pronouncing the divorce between Henry VIII and Queen Catherine; and though he might have been impelled rather by the suasions of other men, than by any malicious motive, yet he had thus become the chief author of all the confusion that had followed. He had, moreover, not only been the notorious patron of all the heresies which had burst into the kingdom, but had persisted in maintaining them, both by disputation and by writing: and so long a perseverance in error had never, but in time of schism, been pardoned by the church. The preacher also stated, that in addition to these causes of Cranmer's execution, the queen and her council were moved by certain other reasons, which it would not be fit or convenient to disclose.

Having next exhorted the bystanders to profit by the melancholy example before them, Dr. Cole addressed his discourse to Cranmer himself. He reminded the prisoner of the mercy of God, who will not suffer us to be tempted beyond what we are able to bear; expressed a good hope that he would, like the penitent thief, be that day with Christ in Paradise; encouraged him to meditate on the deliverance of the three children, to whom God made the flame seem like a pleasant dew; on the rejoicing of St. Andrew in his cross, and the patience of St. Laurence on the fire; and assured him that if in his extremity he should call on God, and on such as have died in his faith, he would either abate the fury of the flame, or else would give the sufferer strengh to endure it. He gloried in the final conversion of Cranmer to the truth, which could only be regarded as the work of God: and concluded with many expressions of commendation, and with a promise that masses should be sung for his soul in every church in Oxford:

Having finished his sermon, the preacher desired that all who were present would offer up their supplications for the prisoner. On this Cranmer himself immediately knelt down in secret prayer. His example was followed by the rest of the congregation. They all of them prayed together, as by one consent. Those among them who once hated him as an incorrigible heretic, were now melted by the spectacle of his repentance; while others who had loved him before, were yet unable suddenly to hate him, and fondly clung to the hope that after all he would return to his former profession, and make a public acknowledgment of his fall. This general feeling of compassion had been powerfully heightened by the appearance of the archbishop during the sermon. He had stoed before the people the very image of sorrow; his face bathed in tears, his eyes sometimes raised to heaven in hope, sometimes cast down to the earth in shame, but still preserving throughout a venerable aspect, and quiet solemnity of demeanor.

When his silent devotions were concluded, Cranmer rose from his knees, and turning towards the people, heartily thanked them for their prayers. He then said, "I will now pray for myself, as I could best devise for my own comfort, and say the prayer, word for word, as I have here written it;" and remaining still on his feet, he recited from his manuscript the following supplication:—

"O Father of Heaven; O Son of God, Redeemer of the world; O Holy Ghost, proceeding from them both, three persons and one God, have mercy upon me most wretched caitiff, and miserable sinner! I, who have offended both heaven and earth, and more grievously than any tongue can express, whither then may I go, or whither should I fly for succor? To heaven I may be ashamed to lift up mine eyes; and in earth I find no refuge. What shall I then do? Shall I despair? God forbid. O good God! Thou art merciful, and refusest none that come unto thee for succor. To thee therefore do I run. To thee do I humble myself: saying, O Lord God, my sins be great, but yet have mercy upon me for thy great mercy. O God the Son, thou wast not made man, this great mystery was not wrought, for few or small offences. Nor thou didst not give thy Son unto death, O God, the father, for our little and small sins only, but for all the greatest sins of the world; so that the sinner return unto thee with a penitent heart; as I do here at this present. Wherefore have mercy upon me, O Lord, whose property is always to have mercy. For although my sins be great, yet thy mercy is greater. I crave nothing, O Lord, for mine own merits, but for thy name's sake, that it may be glorified thereby; and for thy dear Son Jesus Christ's sake."

Having finished this act of devotion, he knelt down, and repeated the Lord's Prayer, all the congregation on their knees devoutly joining him. Then, rising on his feet once more, he addressed a solemn exhortation to the people, in which he warned them that *the love of this world is hatred against God;* enjoined them to remain in cheerful and willing obedience to the king and queen; besought them to live together like brethren and sisters; and, lastly, entreated the wealthy to lay up in their hearts the saying of our Lord, *It is hard for a rich man to enter into heaven;* and also the words of St. John,—"*Whoso hath this world's goods, and seeth his brother have need, and shutteth up his bowels of compassion from him, how dwelleth the love of God in him?*"* He then continued his address to the people, in the following memorable words:—

"And now, forasmuch as I am come to the last end of my life, whereupon hangeth all my life past, and my life to come, either to live with my Saviour Christ in heaven, in joy, or else to be in pain ever with wicked devils in hell; and I see before mine eyes presently either heaven ready to receive me, or hell ready to swallow me up; I shall therefore declare unto you my very faith, how I believe, without color or dissimulation. For now is no time to dissemble, whatsoever I have written in times past.

"First, I believe in God the Father Almighty, Maker of heaven and earth, &c., and every article of he Catholic faith, every word and sentence taught by our Saviour Christ, his apostles, and prophets, in the Old and New Testament.

"And now I come to the great thing that troubleth my conscience more than any other thing that ever I said or did in my life: and that is, the setting abroad *of writings contrary to the truth. Which here now I renounce, and refuse, as things written with my hand contrary to the truth which I thought in my heart, and writ for fear of death, and to save my life. if it might be: and that is, all such bills, which I have written or signed with mine own hand, since my degradation; wherein I have written many* *things untrue. And forasmuch as my hand offended in writing contrary to my heart, therefore my hand shall first be punished. For if I may come to the fire, it shall be first burned. And as for the pope, I refuse him, as Christ's enemy and Antichrist, with all his false doctrine.*"

The amazement and confusion of the assembly at the utterance of this speech may very easily be imagined. All his judges, and doubtless a very large portion of the audience, expected nothing more from his lips but an open and penitent abjuration of his Protestant opinions. Instead of this, he proclaimed that he had nothing to repent of but his unworthy professions of the Romish faith. It was to no purpose that Lord Williams vehemently reminded him of this submission, and dissembling, and exhorted him to remember himself and play the Christian man. The archbishop remained unshaken. "Alas! my lord," was his reply, "I have been a man that all my life loved plainness, and never dissembled till now against the truth, which I am most sorry for; and I cannot better play the Christian man than by speaking the truth, as I now do." He farther protested that, with regard to the doctrine of the Sacrament, he still believed precisely as he had written in his book against the Bishop of Winchester.

By this time the exasperation of the Romanists had become outrageous. The assembly broke up, and the archbishop was hurried to the place of execution. On his way thither, one of the friars, foaming with rage and disappointment, assailed him with reproaches for his inconstancy, and bade him remember his recantation; repeatedly crying out, "Was it not thy own doing?"[†] On his arrival at the stake, he put off his garments with alacrity, and even with haste, and stood upright in his shirt. When his caps were taken off, his head appeared so bare, that not a single hair could be discerned upon it. His beard, however, was long and thick, and his countenance altogether of such reverend gravity, that neither friend nor foe could look upon it without emotion. While the preparations for his death were completing, a bachelor of divinity, accompanied by two Spanish friars, made one desperate effort to recall him to his apostacy. But their attempts were utterly fruitless. The archbishop was only moved to repeat that he sorely repented of his recantation, because he knew it was contrary to the truth. On this the friars said, in Latin, to each other,—"Let us leave him to himself; the devil is surely with him, and we ought no longer to be near him." Lord Williams became impatient of further delay, and ordered the proceedings to be *cut short.* Cranmer, therefore, took his surrounding friends by the hand, and bade them his last farewell: while his defeated monitor, the bachelor, indignantly rebuked them for touching the heretic, and protested that he was bitterly sorry for having come into his company. He could not forbear, however, once more, to urge his adherence to his recantation. The answer of Cranmer was—"This is the hand that wrote it, and therefore it shall suffer punishment."

The fire was, now, speedily kindled; and Cranmer immediately made good his words, by thrusting his right hand into the flame. He held it there with unflinching steadiness, exclaiming from time to time —"This hand hath offended,—this unworthy hand!" So immoveable was his fortitude, that the spectators could plainly perceive the fire consuming his hand, before it had materially injured any other part of his frame. At last, the pile became completely lighted, and then the fire soon did its work upon him. To the very last, his resolution continued firm. When the flames mounted, so that he was almost enveloped by them, he appeared to move no more than the stake to which he was bound. His eyes, all the while, were steadfastly raised towards heavens; and, so long as the power of utterance remained, his swollen tongue was repeatedly heard to exclaim, 'This unworthy hand!—Lord Jesus, receive my spirit.'

That Cranmer's "patience in the torment, and courage in dying" were worthy of the noblest cause, is amply and generously attested by the Roman Catholic spectator who has left us an account of his last sufferings. "If," says the writer of that narrative, "it had been either for the glory of God, the weal of his country, or the testimony of the truth,—as it was for a pernicious error, and subversion of true religion.—I could worthily have commended the example, and matched it with the fame of any father of ancient time." There is a sort of traditional story that, after he was burned, his heart was found unconsumed in the midst of the ashes. The tale is scarcely worth repeating. It is, indeed, just possible, that when the flames had nearly consumed the parts more immediately exposed to their action, the heart may have been separated from the body; and may have accidentally fallen upon a spot where the fire was less fierce: and there it may have been found comparatively uninjured, or, at least, in a state which might enable a spectator to distinguish it. And this may have given birth to a report, which credulity or superstition might exalt into a miracle.

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[*] This exhortation was rendered very appropriate, by the severe scarcity then prevalent at Oxford.

[†] *Nonne fecisti.* Foxe.

Thus perished Archbishop Cranmer;—a man, to whom the obligations of this country must ever be "broad and deep:" for to his conscientious labors, and incomparable prudence and moderation, we are, under Providence, mainly indebted for the present fabric of our Protestant church. The brightness of his last hour was preceded, it is true, by an awful interval of darkness. The shadows, however, most happily passed away from him; and his name resumed its lustre in the midst of the fires of his martyrdom.

Memoirs of the Court of King Charles the I., by Lucy Aiken, 2 vol. 8vo. *Philadelphia*, Cary, Lea & Blanchard.—Historical memoirs, combining as these do, the graver facts of history, with less noticed but often not less influential personal incidents—which at one moment exhibit before us on the stage, in all the illusions of a brilliant reality, the march of great men and great events, and then taking us behind the scenes show us these same men and the agents in these great works, in their natural dimensions and colors,—Memoirs such as these are always found most attractive as well as instructive. The former works from the same pen, on the Court of James, and of that on Elizabeth, dispense us, by the success they met with, from enlarging on the qualifications which Miss Aiken brings to the task. We content ourselves, therefore, with an extract, which may serve to show how well she narrates: it is that which presents the closing days of the trial and execution of Charles. (It will be found at page 750, of this Journal.) We have taken this, both on account of the interest attached to the event itself, as for the sake of affording means of comparison between the record of this political martyrdom—as all good royalists call the death of Charles—and the religious martyrdom of Cranmer, of which an account from another source is inserted above:

The Geographical Annual, for 1834. Philadelphir, Carey, Lea & Blanchard.—The beautiful, and useful as beautiful cabinet atlas, which these publishers gave us last year, they have this year republished, with increased luxury of execution, as an Annual; and, inasmuch as it vies in externals with the other Annuals, and has abundant well colored maps to supply the place of a few engravings, we deem it by far the best of these publications, and one, moreover, that does not lose its value.

The Ladies' and Gentlemen's Pocket Annual, for 1834: Edited by Edwin Williams, author of the New York Annual Register. *New York:* J. Disturnell.—An almanac, a register of public functionaries in the general and state governments, of the army and navy, with blank pages for memorandums, (more than will be improved we fear,) and some selections in prose and verse, make up this Pocket Book, which we commend as both ornamental and convenient.

The Juvenile Repository; vol. I. *Boston:* B. G. Greene and Leo. C. Bowles, New York H. N. Kimball 110 Fulton street. This little collection prepared by a lady, is made up of stories, anecdotes, and information written in a style suited to the capacity and intelligence of children, and calculated to improve their habits and understanding. There are wood cuts which add always to the attraction of children's books.

We have several other works on hand which we are prevented from noticing this week, but they shall not be passed over.

No. IV.

Bedford, Pa. Oct. 24th, 1833.

We have commenced ascending the Alleghanies. A cold, difficult ride among the hills, has brought us at last to an excellent tavern in the little town, from which I write. A blazing fire of seasoned oak in a large franklin, sputters and crackles before me; and, after having warmed my fingers, and spent some twenty minutes in examining an extensive collection of Indian arms and equipments, arranged around the room with a degree of taste, that would not have disgraced the study of Sir Walter Scott, I sit down quietly to give you my first impressions of this mountain region.

We entered these highlands yesterday. It was about an hour before sunset that we commenced ascending a mountain ridge, whose deep blue outline, visible for many a long mile before we reached the base, might be mistaken in the distance for the loftier rampart of which it is only the outpost. The elevation, which showed afar off like a straight line along the horizon, became broken in appearance as the eye at a nearer view measured its ragged eminences, but it was not till we were winding up a broad hollow scooped out of the hill-side, and through which the beams of the declining sun played upon the fields and farm-houses beyond, that the true character of the adjacent region opened upon us. The ridge we were ascending, still rose like a huge wall before us, but the peaks, which had seemed to lean against the clear October sky like loftier summits of the same elevation, now stood apart from the frowning barrier, towering up each from its own base—the bastions of the vast rampart we were scaling. Each step of our ascent seemed now to bring out some new beauty, as, at the successive turns of the road, the view eastward was widened or contracted by the wooded glen up which it led. But all of these charming glimpses, though any of them would have made a fine cabinet picture, were forgotten in the varied prospect that opened upon us at the summit of the ridge. Behind, toward the east, evening seemed almost to have closed in upon the hamlet from which we had commenced our ascent, at the base of the mountain, but beyond its deepening shadow, the warm sunset smiled over a thousand orchards and cultivated fields, dotted with farm-houses, and relieved by patches of woodland, whose gorgeous autumnal tints made them show like the flower-beds of one broad garden. Southwardly, the bold upland which here heaved at once from the arable grounds beneath us, while it swelled higher, rose less suddenly from the plain. At one point the brown fields seemed to be climbing its slopes, while here and there a smooth meadow ran like the frith of a sea within its yawning glens, and now again peak after peak of this part of the range could be traced for leagues away, till the last blue summit melted into the sky, and was finally lost in the mellow distance. Such, while our horses' heads were turned to the northwest, was the rich and varied view behind us—the prospect from the Catskills is the only one I can recollect that rivals it in magnificence. But another scene more striking, though not so imposing, was also at hand,—a ridge like that we had just crossed rose before us; but beneath our very feet, and apparently so near that it seemed as if one might drop a stone into its bosom, lay one of the loveliest little vallies into which the sun ever shone. It was not a mile in width, beautifully cultivated, and with one small village reposing in its very centre,—the southern extremity seemed to wind among the lofty hills I have already attempted to describe, but its confines toward the north were at once determined by a cluster of highlands, whose unequal summits waved boldly forth in the purple light of evening. The sun, which had now withdrawn his beams from the scene behind us, still lingered near this lovely spot, and his last glances, before they reached the hill-side we were descending, flashed upon the windows of the village church, and creeping unwillingly up its spire, touched with glory the gilded vane; then from the sweeping cone of a pine above us, smiling wistfully back on the landscape he was leaving, yielded at last to coming night.

The descent of the mountain, from its multiplied windings, consumed more time than I had anticipated. The faint rays of a young moon were just beginning to compete successfully with the fading tints of day, before we had neared the village sufficiently to hear the lowing of cattle, and the shrill shout of the cow-boy, driving his charge homeward; and her maturer beams were softened by the thin haze which rose imperceptibly from a brook winding through the valley, before we reached our destination for the night. The occasional jingling of a wagoner's bells in the distance, and the merriment of a group of children playing by the moonlight in a grassy lot near the stream, were the only sounds which broke the stillness of the scene as we drove up to the door. I thought of the happy valley of Rasselas, and wondered whether the inhabitants of this secluded spot could really ever wish to wander beyond its beautiful precincts.

The gradual, successive, and delicious blending of lights, as I have attempted to describe them, under which I first beheld the little valley of M Connelsville, will doubtless account for much of my admiration of it; and indeed some of its features were changed, and not for the better, when viewed under a different aspect the next morning. A sharp north-easter, in spite of the barriers which had seemed to shelter it, drove down the valley; a cold drizzling rain, with its attendant mist, shut from view the mountain tops around; and the village dwellings, lining one long narrow street, and now no longer gilded with the hues of sunset, nor standing clearly out in the silver light of the moon, showed like the miserable hovels they were; the snug stone house where I had passed the night seemed to be almost the only tolerable building in the village, and I was not sorry to pass its last straggling enclosure, and commence ascending the arduous height beyond. The summit of this attained, another valley, about double the width of that just passed, lay before us: and as the rain subsided at noon, leaving a gloomy lowering day, we could discover through the cold gray atmosphere ridge succeeding to ridge leaning like successive layers against the western sky.

A half a day's rough ride among these wild ravines brought us at last to the banks of the Juniata, along which an excellent road is cut for some distance. The stream, though in the midst of scenery of the boldest description, keeps its way so calmly between its rocky banks, that the dead leaf upon its bosom floats for nearly a mile, before a ripple curls over its crisped sides, and sinks the little shallop to the bottom. We dined near nightfall at a small hamlet known, from a brook that runs through it, as "The Bloody Run." The stream which bears this startling name is a rill so small, that its existence is barely perceptible, as it creeps through the pebbles across the road, and hastens to hide its slender current in the long grass of an orchard beyond; but its waters will be pointed out by the villagers with interest, so long as they dampen the channel where they once flowed in all the pride and fulness of a mountain torrent.

It was several years before the revolution, according to the statement given to me by one of those distinguished persons who in country towns always figure after a snowstorm or freshet, as the 'oldest inhabitant of the place,' that a large party of colonists, on their march toward Fort Du Quesne, were here cut off by the Indians. The ambushed foe had allowed the main body to pass the brook, and surmount the heights beyond; and the rear-guard, with the cattle they had in leading for the use of the troops, were drinking from the stream, when the onslaught was made. The Indians rushed from their covert, and burst upon their victims so suddenly, that fifty whites were massacred almost before resistance was attempted. Those who were standing were dropped like deer at gaze by the forest marksmen; and those who were stooping over the stream, before they even heard the charging yell of their assailants, received the blow from the tomahawk which mingled their life's blood with the current from which they were drinking.

The retribution of the whites is said to have been furious and terrible; the body of men in advance returned upon their tracks, encamped upon the spot, and after duly fortifying themselves, divided into parties, and scoured the forest for leagues. My informant, who gave me only the traditioinary account of the village, could not tell how long this wild chase lasted; but that it must have been fearfully successful, is proved not only by the oral record of the place, but by the loose bones, and Indian weapons, which are at this day continually found amid piles of stone in the adjacent woods; the Indians probably returning to the valley after the storm had passed over, and heaping their customary *cairn* over the bodies of their dead kindred.

What a contrast was the peaceful scene I now beheld, to that which the place witnessed some seventy years ago; a train of huge Pennsylvania wagons were standing variously drawn up, upon the very spot where the conflict was deadliest; the smoking teams of some were just being unharnessed, a few jaded beasts stood lazily drinking from the shallow stream that gurgled around their fetlocks, while others, more animated at the near prospect of food and rest, jingled the bells appended to the collars in unison with their iron traces which clanked over the stones, as they stalked off to the stable. To these signs of quiet, and security, were added those true village appearances which struck me so pleasingly on my approach to McConnelsville. A buxom country-girl or two could be seen moving through the enclosures bearing the milk-pail to meet the cows which were coming in lowing along the highway, while the shouts and laughter of a troop of boys just let loose from school, came merrily on the ear as they frolicked on a little green, hard by. My companion stood in the midst of them, holding a piece of silver in his fingers, while a dozen little chaps around him were trying who could win the bright guerdon by standing on one leg the longest: the ridiculous postures of the little crew, with the not less ludicrous gravity of my friend, who was thus amusing himself, of course put an end to my sober musings; but I could not help, while advancing to the scene of the sport, fancying for a moment the effect of the war-whoop breaking suddenly, as ere now it often has, upon a scene apparently so safe, sheltered, and happy.—Good night.

SOMERSET, Oct. 26th.

You have read in the newspaper, of the recent destruction of this place by fire; it must have been large and flourishing, judging by the extensive ruins which I have just been trying to trace by the frosty light of the moon now shining over them. The appearances of desolation here are really melancholy, the tavern where we put up is the only one left standing out of five or six, and it is so crowded with the houseless inhabitants that I find it difficult to get a place to write in. I was not a little amused, while sitting an hour perforce in the bar room, to hear half a dozen fellows, who had lost their all, making themselves merry with a thriving tailor, who, saving every thing but a pair of spectacles, and his *goose*, makes more ado about his losses than any of the sufferers. A large collection for their relief has been made among the charitable of the neighbouring villages, and Tape, it is said, insists upon appearing before the financial committee to receive a consideration for his ruined spectacles and his timelessly wasted goose.

We are now in the bosom of the Alleghanies,—the scenery passed to day is beautiful, most beautiful. The mountains are loftier, as well as more imposing in form, than those which skirt these wild regions eastwardly; whichever way the eye directs itself, they are piled upon each other in masses which blend at last with the clouds above them. At one point they lie in confused heaps together; at another, they lap each other with outlines as distinct as if the crest of each were of chiselled stone,—some, while the breeze quivers throgub their dense forests, rear their round live backs like the hump of a camel boldly near, and some swelling more gradually from the vales below, show in the blue distance like waves caught on the curl by some mighty hand, and arrested ere they broke on the misty region beyond. Then for their foliage! the glorious hues of autumn are here displayed in all their fulness, and brilliancy, and power—volume upon volume, like the rolling masses of sunset clouds, the leafy summits fold against the sky—calm at one moment as the bow of peace whose tints they borrow, and at another flaming, like the banners of a thousand battles in the breeze.

But why should I attempt to describe what baffles all description. The humblest grove of our country is, at this season, arrayed in colours such as the Italian masters never dreamed of; and woods like these assume a pomp which awes the pencil into weakness. Such forests, such foliage were unknown when our language was invented. Let those who named the noble-sounding rivers that reflect their glories, supply words to describe them.

Farewell. I shall write to you next from Wheeling, Virginia, and if you do not think me tedious, will touch again upon the beauties of the region througe which I am now passing.

H.

SUMMARY.

APPOINTMENT BY THE PRESIDENT.—Richard Pollard, of Virginia, to be Consul of the United States in the city of Mexico, in the place of James S. Wilson, resigned.

Benjamin Franklin Butler, of New York, to be Attorney General of the United States, in the place of Roger B. Taney.—[Globe.]

We are confident that, at no distant day, the Southern manufactories will far outstrip those caried on to the North,—for the simple reason, that *slave labor* can be successfully and most profitably employed.—The time was when such an opinion would have found no favorers. Now, we believe, it is getting to be universally admitted. We think we see clearly the dawning of a new era in the prospect of the South, from this fact alone. We have recently seen statistical statements, which satisfy us that when the Cotton Factories now talked of are put into operation, in the Southern country, we shall find slave labor more valuable and useful than it has yet been to the people in our section of country.—[Alexandria Phœnix.]

The annexed article, from the Buffalo Journal, on the meteoric phenomena of the 13th, differs in two important particulars from all other accounts we have seen, of that occurrence—1st, in describing the luminous bodies as shooting *upwards* as well as in all other directions; and 2d, in stating that the Aurora borealis was visible, during the whole time.

The absence of the Aurora was particularly remarked here, as, by a communication now before us, we see it was at Keene, N.H., and so in all the other accounts we have seen.

[*From the Buffalo Journal.*]

Very interesting atmospherical phenomena were visible, a little before daylight this morning, in this city. My attention was first called to them about half past four, A. M. The wind, which had been very heavy for many hours, had abated considerably, every vestige of clouds had disappeared, and the stars were shining through an unusually clear atmosphere. The air from within twenty feet of the earth to, apparently the ordinary height of the clouds, (half a mile,) was filled with phosphoric particles, which were continually and successively becoming luminous. They all passed, while visible, with great velocity through the air, but in no uniform direction—some rose, some fell, others moved horizontally, and others again, at every conceivable angle, to these several courses. Their color was a vivid white, resembling that of the flame of steel wire burning in oxygen. Their sizes were various, but mostly about the apparent size of stars of the second magnitude. The distance of their luminous flights were various and not easily calculated. Many of them in their passage, left a luminous line in the air, of their own color, which was often several yards in length, and usually remained visible from one to three seconds. I have said there was no cloud; there was none, but the whole atmosphere was constantly, at very short intervals, illuminated by flashes of light, in no way differing from ordinary silent electrical explosions The *Aurora Borealis* during the whole time of my observations, which was about half an hour, was distinctly visible, though by no means so brilliant, or so active as that meteor usually is, when visible here.

Upon the whole, the scene was by far the most sublime meteoric display I ever beheld; and I only regret that the unfavorable hour of its occurrence deprived me of an opportunity of observing the influence that such a singular electrical state of the atmosphere may be supposed to have exerted upon the magnetic needle. H.

Buffalo, Wednesday, Nov. 13, 1833.

[*From the New Haven Herald.*]

THE METEORS.—About day-break this morning, our sky presented a remarkable exhibition of Fire-Balls, commonly called *Shooting Stars.* The attention of the writer was first called to the phenomenon about half past five o'clock, from which time until near sunrise, the apperrance of these meteors was striking and splendid, beyond any thing of the kind he has ever witnessed or heard of.

To form some idea of the phenomenon, the reader may imagine a constant succession of fire-balls, resembling sky rockets, radiating in all directions from a point in the heavens near the zenith, and following the arch of the sky towards the horizon.—They proceeded to various distances from the radiating point, leaving after them a vivid streak of light, and usually exploding before they disappeared. The balls were of various sizes, and degrees of splendor: some were mere points, but others were larger and brighter than Jupiter or Venus; and one, seen by a credible witness, before the writer was called, was judged to be nearly as large as the moon. The flashes of light, though less intense than lightning, were so bright as to awaken people in their beds. One ball that shot off in the northwest direction, and exploded near the star Capella, left, just behind the place of explosion, a phosphorescent train, of peculiar beauty. This line was at first nearly straight, but it shortly began to contract in length, and dilate in breadth, and assume the figure of a serpent folding itself up, until it appeared like a small luminous cloud of vapor. This cloud was borne eastward by the wind, opposite to the direction in which the meteor had proceeded, remaining in sight several minutes. The light was usually white, but was occasionally prismatic, with a predominance of blue.

A little before six o'clock, it appeared to the company, that the point of radiation was moving eastward from the zenith, when it occurred to the writer to mark its place, accurately, among the fixed stars. The point was then seen to be in the constellation Leo, within the bend of the *sickle*, a little to the westward of Gamma Leonis, and not far from Regulus. During the hour following, the radiant point remained stationary in the same part of Leo, although the constellation in the mean time, by the diurnal revolution, moved westward to the meridian 15 degrees. By referring to a Celestial Globe, it will be seen, that this point has a right ascension of 150 degrees, and a declination of about 20 degrees. Consequently it was 20 degrees 18 minutes south of our zenith.

The weather had sustained a recent change. On the evening of the 11th, a very copious southerly rain fell, and on the 12th, a high westerly wind prevailed, by gusts. Last evening the sky was very serene; a few falling stars were observed, but no so numerous as to excite particular attention.

The writings of Humboldt contain a description of a singular phenomena observed by Bonpland, at Cumana. It is worthy of remark that this phenomenon was seen nearly at the same hour of the morning, and on the 12th of November.

As the cause of "Falling Stars" is not well understood by meteorologists, it is desirable to collect all the facts attending this phenomenon, stated with as much precision as possible. The subscriber, therefore, requests to be informed of any particulars which were observed by others, respecting the *time* when it was first discovered, the position of the *radiant point* above mentioned, whether progressive or stationary and of any other facts relating to the meteors. DENISON OLMSTED.

Yale College, Nov. 12, 1833.

The rain of stars which has excited so much speculation, and, in some quarters, consternation here, extended to Boston on the East and Richmond on the

South of us. The Philadelphia Gazette of Saturday gives us the following account of a similar phenomenon in the year 1799:

An antiquarian friend furnished us yesterday with an extract from the Newburyport Herald, of December, 1799, in which allusion is made to a display of shooting stars, precisely similar to that witnessed a few days since. What is certainly remarkable in this statement, is, that the phenomenon was observed about *the same day of the month*—the 12th of November—just thirty-four years ago. We subjoin the extract from the Herald:

"*Remarkable Phenomena, seen by Capt. Woodman and crew of the brig Nymph.*—On my late passage home from the Island of St. Domingo, being in lat. 29, long. 71, on the 12th of November, 1799, at half past one o'clock in the morning, the weather being very clear and pleasant, the wind to the eastward, the moon near the full, and shining very bright, observed the stars to shoot in great numbers from every part of the compass, and at two o'clock the whole atmosphere appeared to be full of stars; I may say thousands of thousands, shooting and blazing in every direction, in a most extraordinary and alarming manner, and so continued till day light. The day following, the wind came round with the sun, till it got to the northward, and the whole atmosphere was filled with smoke, attended with a strong smell like the burning of wood, and so continued for several days, until I got lat. 35 N. And further, on my arrival at the Vineyard, I met with there several masters of vessels, who were on their passage at the same time, and said that the stars made the same appearance to them on the night above mentioned, though they were then several degrees to the northward of me."

The phenomenon alluded to above, is spoken of in Barritt's Astronomy, as having been seen by Mr. Andrew Ellicott, who was sent out by our Government to fix the boundary between the Spanish possessions in North America and the United States. "I was called up," says Mr. Ellicott, "about three o'clock in the morning to see the shooting stars as it is called. The whole Heavens appeared as if illuminated with sky rockets, which disappeared only by the light of the sun after day break. The Meteors, which at any one instant of time appeared as numerous as the stars, flew in all possible directions except *from* the earth, *towards* which they were all inclined more or less, and some of them descended perpendicularly over the vessel we were in, so that I was in constant expectation of their falling on us."

Humboldt also witnessed the phenomena, at Cumana, South America, at the same time. His description of it is as follows:—

"Towards morning of the 12th November, 1799, a very extraordinary display of luminous meteors was observed in the east by M. Bonpland, who had risen to enjoy the freshness of the air in the gallery. Thousands of fire balls and falling stars succeeded each other during four hours, having a direction from north to south; and filling a space of the sky extending from the true east 30 degrees on either side.—They rose above the horizon at E. N. E. and at E. described arcs of various sizes, and fell towards S. some attaining a height of 40°; and all exceeding 25° or 30°. No trace of clouds was to be seen, and a very slight easterly wind blew in the lower regions of the atmosphere. All the meteors left luminous traces from five to ten degrees in length, the phosphorescence of which lasted seven or eight seconds. The fireballs seemed to explode, but the largest disappeared without scintillation; and many of the falling stars had a very distant nucleus, as large as the disk of Jupiter, from which sparks were emitted. The light occasioned by them was white,—an effect which must be attributed to the absence of vapors; stars of the first magnitude having within the tropics, a much paler hue at their rising than in Europe,

As the inhabitants of Cumana leave their houses before four, to attend the first morning mass, most of them were witnesses of this phenomenon, which gradually ceased soon after, although some were still perceived a quarter of an hour before sunrise.

The day of the 12th November was exceedingly hot, and in the evening the reddish vapeur reappeared in the horizon, and rose to the height of 14°. This was the last time it was seen that year.

The researches of M. Chladni having directed the attention of the scientific world to fireballs and falling stars at the period of Humboldt's departure from home, he did not fail to inquire during his journey from Caraccas to the Rio Negro, whether the meteors of the 12th November had been seen. He found that it had been observed by various individuals in places very remote from each other; and on returning to Europe was astonished to find that *they* had been seen there also.

It is now about three years and a half since the travelling on the Baltimore and Ohio Rail Road was commenced, and more than three hundred thousand passengers have since travelled on it without, it is said, a single instance of serious injury, to life or limb, having occurred to any one of them.

Veto Miseries.—The navigation is so badly obstructed that neither Steamboats nor other Vessels can pass the Overslaugh. The Steamboats ERIE, DE WITT CLINTON, CONSTITUTION, and SANDUSKY, with several Tow-Boats, and a fleet of Schooners and Sloops are now aground. The consequence is, that an immense amount of property is embargoed just as the cold weather threatens to close the Canals! * * * * As Congress is about to meet, this question should be urged upon its immediate attention. The navigation of the Hudson River must be improved, or Albany becomes a deserted city.—[Alb. Eve. Jour. of Wednesday.]

Railroad Accident.—A slight fall of snow, early on Tuesday morning made the tracks of the Railroad in State st. so slippery, that the brake was entirely useless, in holding back the first car, which came over the road, down the hill towards the car-house. The door being shut, one of the horses attached to the leading car, was seriously crushed, and subsequently died. Some sand sprinkled on the ice, which covered the rails, obviated the difficulty.—[Albany Daily Advertiser.]

The Cincinnati Advertiser gives the following particulars of the loss of the steamboat *New Brunswick*, on her passage from New Orleans to St. Louis:—

She took fire among some chairs on deck, that were matted, while the passengers were at dinner, which had burnt into the ladies' cabin before it was discovered. The boat was immediately run on shore, from the apprehension she would blow up, the alarm of powder being on board having been spread among the passengers; the passengers and crew had scarcely got on shore, when she blew up, and is a total loss, vessel and cargo, with passengers' baggage. No lives lost.

A numerous body of Operative Mechanics met last Monday at the North American Coffee House for the purpose of petitioning the Legislature to abolish the practice of employing convicts in the various branches of manufacturing, and mechanics; several resolutions were passed unanimously, and a Committee of twenty-five appointed with power to add to their number to take such measures as they shall deem most expedient to further the wishes of the meeting.

NEW QUARTERLY REVIEW.—We have before us the Prospectus of the *United States Quarterly Review*, to be published in Philadelphia, by A. Waldie, under the charge, as editor, of Prof. *Vethake*, late of the University in this city.

The land is full of portents which we take not upon us to read or interpret. In addition to the accounts of hurricanes and falling stars heretofore published, we have in the annexed extract of a letter from the vicinity of Hudson in this State, the notice of another very unusual occurrence:

"WOODBURN, NEAR HUDSON, Nov. 15.

"A singular occurrence took place on my farm some days ago, which has excited a good deal of speculation among all who have since visited the spot. A beautiful and well grown little wood which you remember on the left of the road as you approach the house, containing about an acre and a half, suddenly sunk down about thirty feet, most part of it perpendicularly; so that where not long since the roots of the trees were to all appearance firmly imbedded, the topmost branches now peep out. The wood is bounded by the creek, of which the sides and bottom are blue clay. The land near the bank, from some unexplained cause, seems to have given way all at once, and slid into the creek; which, by the mass thrown into it, is so filled up, that from its previous width of fifty feet, with an occasional depth of twenty, it is reduced to a little rill, which one might easily jump across. A strip of land adjoining the road of about thirty feet wide and of considerable length, has sunk straight down, so that where the surface was before level, there is now a perpendicular bank of thirty feet. The spectacle altogether is most curious, but, as you may imagine, presents no great improvement to the appearance of my farm."

MOBILE, Nov. 4.—*Important.*—We are indebted to the Marshal of this District for the following extract of a letter of instructions to the Secretary of War, under date of the 19th of Oct. We hasten to lay it before our readers:—

"A commission has been instituted which will proceed immediately to the location of the Creek lands. They have been directed to lose no time in the performance of this service, in order that the Indians may be removed upon their own reservations, and the necessity of your action in the affair, obviated at as early a day as possible.

"They will probably commence their labors at Fort Mitchell by the 1st of November."

GREAT FALL, NEW HAMPSHIRE, 16th Nov.—*Hurricane.*—On Saturday night last, about 11 o'clock, we were visited by a hurricane from the north west, which lasted about thirty minutes, and for the time was uncommonly severe and threatening. Many houses rocked and shook to an alarming degree, and we learn that several chimnies were blown down in Dover; in one case the bricks broke through the roof and some of them fell on a bed on which a person lodged, who fortunately escaped unhurt. We also learn that considerable damage was done to fences, &c. in the vicinity lying in the range of the storm. The Boston papers speak of it as being violent in that quarter. Some damage was sustained in Cambridgeport and other places adjacent, and had it continued any considerable time, would have terminated in an extensive and serious catastrophe. The N. W. corner of Rev. Mr. Gannet's meetinghouse was blown entirely clear of the building, and the joists and rafters carried by the hurricane 300 feet distant.

Important from Mexico.—A passenger in the brig Spark, communicates to us the subjoined intelligence:—

An estafette that left Mexico on the 10th ult. arrived at Vera Cruz on the 12th, and brought official information of the total defeat of the insurgents. The principal points of Guanajuato were taken by the government troops, and the commandant of the station offered to capitulate, in order to save the horrors of an assault. The Vera Cruz Journal of the 12th, contains his correspondence with Santa Anna upon the subject.

The traitor Escalado has been unanimously condemned to death, and was to have been hung on the 12th, in the capital.

Mr. Tadeo Ortiz, former Mexican consul at Bordeaux, died of cholera on board the Spark, during the voyage. He had obtained a concession from his government authorizing the colonizing of strangers upon the banks of the Rio Brassos.—[New Orleans Bee.]

FROM ST. VINCENTS.—By the Br. brig Jabez the Editors of the New York Daily Advertiser have received files of papers to the 24th Oct. They are filled with the proceedings in the House of Assembly on the subject of the act for abolishing slavery. A solemn Protest against the British act of Parliament had been brought in and adopted; in which they state that the course pursued by the mother country is most fatal to the interests of the Planters, and ruinous to the Island; that the compensation to be allowed is not one tenth the value of the property, &c., and reserve the right of demanding a further compensation. The Council refused to act on the Protest. The Assembly, in transmitting the Protest to the Lieut. Governor, says:—

"We assure your Excellency that, notwithstanding this precautionary mode of proceeding, there is a determination on the part of the Assembly to give their best support to such plans as may, from time to time, be proposed by the supreme Government at home to carry into effect the abolition of slavery in this Colony, and to lay the foundation of future industry and prosperity; without, however, incurring, in the remotest degree, any portion of the great and fearful responsibility of a measure, which will introduce such hazardous changes into the various relations of society.

"I have the honor to be, your Excellency's most obedient, and humble servant.

(Signed) J. P. Ross, *Speaker.*

His Excellency the Lieutenant Governor."

The Proclamation of the King is published, wherein all slaves are to be apprenticed to their masters on the 1st August, 1834, and on the 1st August, 1840, they are to be for ever free. As might be expected, this Proclamation caused the greatest excitement. The Journals, however, admit that they have no power to resist; that they are weak and feeble; and that they have no other course left but to submit, and carry their complaints to the foot of the throne.

[*From* "*Memoirs of the Court of King Charles I.*"]

On the 27th the trial was resumed, when, the court being called, sixty-eight members besides the president answered to their names. "As the king comes in, a cry made in the hall for execution, justice, execution." The king pressing repeatedly to be heard, was told that he must first hear the court; and the president, in a prepared speech, set forth the conduct of the king in contumaciously refusing to answer his charge and denying the jurisdiction of the court, and when overruled in that, still "refusing to submit or answer;" wherefore the court, that they might not be wanting in the trust reposed in them, "nor that any man's wilfullness prevent justice," had taken into consideration the contumacy, and "the confession that in law doth arise upon that contumacy;" also the notoriety of the facts charged upon the prisoner, —and on the whole had considered and agreed upon a sentence. But, as he desired to be first heard, the court did consent to hear him, warning him before of "that he had been minded of at other courts," that he would not be heard against their jurisdiction. "You have offered it," added the president, "formerly, and you have indeed struck at the root, that is, the power and the supreme authority of the commons of England, which this court will not admit a debate of, and which indeed is an irrational thing for them to do, being a court that acts upon authority derived from them, that they should presume to judge upon their superior, from whom there is no appeal." If the king had any thing to say in defence of himself, in respect of the matter charged, it was announced that the court would hear him.

Charles said, in answer, that if he had not thought more of the peace of the kingdom and of the liberty of the subject than his own life, he should have made a defence, by which he might at least have delayed "an ugly sentence," now, he believed, ready to pass upon him; that now, as "a hasty sentence once passed may sooner be repented than recalled," he desired that before the sentence, he might be heard in the Painted Chamber before the two houses of Parliament. The delay could not hurt, and "therefore," he said, "I do conjure you, as you love that you pretend, I hope it is real, the liberty of the subject and the peace of the kingdom," to take it into consideration. The president answered, that this was in effect but a further declining of the jurisdiction of the court, which he had been limited in before. This the king endeavored to deny. "Sir,' said the president, "you say you do not decline the jurisdiction of the court?" "Not," warily replied the king, "in this that I have said."

The president rejoined, that it was in fact a motion both for delay and a coordinate jurisdiction, which this court, now prepared to give sentence, was not obliged to grant; yet the commissioners would retire for half an hour and consider of it.

It was, however, a request which evidently could not safely be conceded by a court erected by an ordinance of the house of commons not only without the concurrence, but in defiance of the dissent of, the house of lords; and on the return of the commissioners, the prisoner was informed that his proposition was inadmissible; that he had too long delayed the court by his contempt and default, and they were unanimously resolved to proceed "to punishment and to judgment."

The king persisted for some time in reiterating his proposition, but was at length put to silence. The president then addressed him in a speech designed to prove to him his own guilt, and the rightfulness and justice of the sentence. He told the king that it plainly appeared he had held very erroneous principles; "for, sir, you have been nowise subject to the law, or that the law had not been your superior. Sir, the court is very well sensible of it, and I hope so are all the understanding people of England, that the law is your superior, that you ought to have ruled according to the law. . . . I know very well that your pretence hath been that you have done so; but, sir, the difference hath been, who shall be the expositors of this law; whether you and your party out of the courts of justice shall take upon them to expound the law, or the courts of justice, who are the expounders;—nay, the sovereign and high court of justice, the parliament of England, that are not only the highest expounders, but the sole makers of the law. Sir, for you to set your single judgment and those that adhere unto you, against the high courts of justice, that is not law. As the law is your superior, so truly, sir, there is something superior to the law, and that is, the people of England. For as they are those that at the first did choose to themselves this form of government, even for justice' sake, that justice might be administered, that peace might be preserved; so, sir, they gave the laws to their governors according to which they should govern; and if these laws should have proved inconvenient, or prejudicial to the public, they had a power in them, and reserved to themselves to alter them as they shall see cause. . . . . The end of having kings or any other form of government, is for the enjoyment of justice. Now, sir, if so be that the king will go contrary to the end of his government, he must understand that he is but an officer in trust, and he ought to discharge that trust, and they are to take order for the animadversion and punishment of such an offending governor. This is not law of yesterday, sir, since the time of the division betwixt you and your people, but it is law of old. And we know very well the authorities that do tell us what the law was in that point upon the election of kings, upon the oath that they took unto their people. And if they did not observe it, there were those things called parliaments; the parliaments were they that were to adjudge (the very words of the authority,) the plaints and wrong done of the king and queen, or their children; such wrongs especially when the people could have nowhere else any remedy. That hath been the people's of England's case; they could not have their remedy any where but in parliament.

"Sir, I speak these things the rather to you, because you were pleased to let fall the other day, that you thought you had as much law as most gentlemen in England. It is very well, sir, and truly it is very fit for the gentlemen of England to understand that law under which they must be governed. And then the Scripture says, 'They that know their master's will and do it not'—What follows? The law is your master, and the acts of parliament." After some remarks on the dignity and antiquity of parliaments, and reproaches against the king on account of his plots for "crushing and confounding" that great bulwark of the people's liberties, which God had been pleased to confound, and to bring him into custody, "that he might be responsible to justice," the president adverted to another topic. "Sir, we know very well, that it is a question much on your side pressed, by what precedent we shall proceed. Truly, sir, for precedents, I shall not upon this occasion institute any long discourse; but it is no new thing to cite precedents of almost all nations where the people, when power hath been in their hands, have made bold to call their kings to account, and where the change of government hath been upon occasion of the tyranny and misgovernment of those that have been placed over them." And he proceeded slightly to recall many examples, several foreign, a considerable number Scottish, some English. Having then asserted the existence of a contract, or bargain, between king and people, and mutual obligations, he thus proceeded to comment upon the delinquencies of the king. "Sir, that we are now upon, by the command of the highest court, hath been and is, to try and judge you for these great offences of yours. Sir, the charge hath called you tyrant, traitor, a murderer and a public enemy to the commonwealth of England. Sir, it had been well if any of these terms might rightly and justly have been spared; if any one of them all." The king uttered an interjection of surprize and indignation. The president then affirmed him a *tyrant* from the arbitrary government he had sought to establish; a *traitor*, as guilty of breach of trust towards his *superior*, the kingdom. "And therefore, sir," he added, "for this breach of trust when you are called to account, your are called to account by your superiors."—A *murderer*, because all the bloody murders acted or committed in the late wars were to be laid to his charge. After which he thus wound up the whole proceeding: "Sir, all that I shall say before the reading of your sentence, it is but this: The court does heartily desire you will seriously think of those evils that you stand guilty of. Sir, you said to us the other day, you wished us to have God before our eyes; truly, sir, I hope all of us have so; that God that we know is a king of kings and lord of lords,—that God with whom there is no respect of persons,—that God that is the avenger of innocent blood. We have that God before us that does bestow a curse upon them that withhold their hands from shedding of blood; which is in the case of guilty malefactors, and that do deserve death: That God we have before our eyes. And, were it not that the consequence of our duty hath called us to this place and this employment, sir, you should have had no appearence of a court here; but, sir, we must prefer the discharge of our duty unto God and unto the kingdom before any other respect whatsoever; and although at this time many of us, if not all of us, are severely threatened by some of your party what they intend to do, we do here declare that we shall not decline or forbear the doing of our duty in the administration of justice even to you, according to the merit of your offence, although God should permit these men to effect all that bloody design in hand against us." He concluded by urging the example of David's repentance on the king's imitation.

King. "I would desire only one word before you give sentence; and that is, that you would hear me concerning these great imputations that you have laid to my charge."—*President*. "Sir, you must give me now leave to go on, for I am not far from your sentence, and your time is past." Again the king pressed to speak, but was again reminded that he had not owned the court, and "too much liberty and delay had been given him already," and a fresh exhortation to repentance was bestowed upon him. The sentence was now read, and the president affirmed it for "the sentence, judgment, and resolution of the whole court," all the members of which stood up as assenting to it.—*King*. "Will you hear me a word, sir?"—*President*. "Sir, you are not to be heard after your sentence. No, by your favor, sir. Guard, withdraw your prisoner." The king again attempted to speak, but being again intterrupted, said, "*I* am not suffered to speak; expect what justice other people will have." The court dispersed.

Thus concluded the most memorable, and in all its circumstances the most unprecedented, judicial proceeding on record. It is exceedingly remarkable that no legal advisers were assigned to the king by the court, and that he made no application for such assistance either before or during the trial. We may perhaps infer, that his resolution was fixed from the beginning to make no acknowledgment of the authority of a court so irregularly constituted in every possible respect, and consequently no defence. By this determination he consulted the interest of his reputation for dignity and consistency, and certainly without sacrificing any chances of acquittal. In the preliminary admission that the source of all power is in the people, and the kingly office a trust of which they are entitled to require an account, he would have pronounced his own sentence of condemnation; for the facts charged were of such a nature as to admit of no denial. In his appeal to the two houses alone there was some compromise of his great principle of irresponsibility. It has been supposed that it was his intention to have abdicated in favor of his son; but as he failed to take any other means of making known that purpose, it is probable that the conjecture is erroneous; and that the design of his appeal was no other than to improve to his advantage the dissension already subsisting between the lords and that packed assembly which called itself the house of commons. Delay might still have afforded scope to some efforts in his favor,—so at least his strange faculty of hoping what he desired may have persuaded him. Yet from what quarter should they arise? No domestic party, it was plain, could attempt his release from the iron grasp of armed force which held him; and with respect to foreign aid, it was now his turn to repeat with Strafford in despair, "Put not your trust in princes!" The potentates of Europe, even those most nearly connected by blood or alliance, viewed his fate with silent apathy. No ambassador from any power or state was sent to intercede in his behalf, excepting one from the United Provinces, commissioned by desire of the prince of Wales, who was not heard till the day before the execution of the king's sentence, when he proved himself but a "cold solicitor."

The prince performed the idle ceremony of sending to the parliament a signed *carte blanche* as ransom for his father's life. Henrietta had previously caused a letter to be delivered by the French ambassador to the Speaker, in which she desired that the house of commons would grant her a pass to come to England that she might use her influence with the king to grant all that they desired, or that at least she might attend upon him in his extremity. But the house would not suffer the letter to be read.

Now first perceiving his death to be inevitable and imminent, Charles commenced his preparations for the event with dignity and composure. Having obtained the attendance of bishop Juxon, he passed the greater part of his last days in the offices of devotion. He declined the offered visit of his nephew the elector of Palatine; but requested that his two children remaining in England, the princess Elizabeth, then in her thirtteenh year, and the duke of Gloucester, in his ninth, might be brought to take a last farewell of their father. The sorrowful parting, and especially the bitter tears and lamentations of the young princess, moved "those to pity that formerly were hard-hearted." Together with his prayers and blessings, the father distributed to them a few jewels —all the wealth that was now left him to bestow upon his children.

On the last night, colonel Hacker, who commanded the guard, "would have placed two musqueteers in the king's bedchamber, which his majesty being acquainted with, he made no reply, only gave a sigh;" but by the entreaties of bishop Juxon and of Herbert he was induced to reverse this unfeeling order.

Charles had lodged at St. James's for two or three nights, whilst the scaffold was preparing in front of Whitehall. On the fatal morning, about ten o'clock, the king was conducted through the garden of the palace and the park to the spot. In the park several companies of foot soldiers were drawn up, with drums beating and colors flying, who formed a line for the king to pass, and his immediate guard of halberdiers attended him, with some of his own gentlemen before, and some behind, walking bare-headed. Juxon went on the right hand of the king, and colonel Tomliuson, to whose custody he was now confided, on the left, the king conversing with him as they went. On arriving at Whitehall, his majesty passed along the galleries to his own bed chamber, where after a little repose the bishop went to prayer; and this being concluded, the king partook of a little bread and wine. Soon after, Hacker came to the chamber door and gave his last signal; on which the bishop and Herbert weeping, fell on their knees, and the king gave them his hands to kiss. He was conducted with the same attendance as before, through the galleries into the banqueting house, and thence, by a passage broken in the wall, upon the scaffold. As he passed along, with a cheerful countenance, many, both men and women, crowded in to gaze upon him, and he could hear them praying for him, "the soldiers not rebuking any of them; by their silence and dejected faces seeming afflicted rather than insulting." Having first looked earnestly at the block, and asked if there were no higher one, the king prepared to speak, addressing himself chiefly to colonel Tomlinson, who stood by his side, aware, as he said, that he should "be heard of few." His speech was an attempted vindication of his political conduct, in which he thought proper to call to witness that God before whom he must shortly apper, that he "never did intend to encroach upon the privileges" of the two-houses of parliament," but that they "began upon" him by laying claim to the militia. He also said, that an unjust sentence which he had suffered to take effect, was now punished by an unjust sentence upon himself. He asserted that he was as much a friend to the liberty and freedom of the people as any one, but that these consisted in having government, and those laws by which their lives and goods might be most their own. To have a share in the government was "nothing pertaining to them, a sovereign and a subject being clean different things." At the suggestion of the bishop, he made a declaration of his adherence to the Church of England as it had been left to him by his father; and thus concluded: "I have a good cause, I have a gracious God, and I will say no more."

He then laid down his head upon the block, and after a few moments spent in prayer, he gave the signal by streaching forth his hands, and it was severed at a single blow. At that awful moment, all other sentiments were lost in grief and horror, and "a dismal universal groan" burst forth from the congregated thousands.

French Colony in Africa.—Boujeiah, the place against which the French expedition from Toulon is directed, lies about half way between Algiers and Constantine, and close to it is the mouth of the Zowah, the most considerable river of the Regency, and upon which is situated the city of Constantine. The harbor is very spacious, much larger than that of Algiers, but not so secure. The Spaniards landed here in the beginning of the sixteenth century. During the minority of Charles I, of Spain, under the regency of Don Ferdinand of Arragon, Cardinal Ximenes, in the year 1509, obtained permission to undertake the conquest of Oran, then a flourishing place, and a kind of republic, under the protection of the Bey of Tremesan, and which, if conquered, was to remain to the Cardinal and his successors in the sea of Toledo, till the Regent should repay the charge of the expedition, as the Cardinal furnished everything except the transports. Having equipped an armament consisting of 10,000 infantry and 4,000 horse, and taking as second in command Count Pedro Navarro, the Cardinal set sail, and landed at Boujeiah. Disembarking all the infantry and 2,000 horse, he ordered the vessel with the rest of the cavalry, to sail direct for Oran. The Moors not conceiving that any of the force had been sent around, went out and gave the Spaniards battle; but after gallantly defending themselves, seeing the Christain flag flying on the walls of their city, they gave way, and were soon dispersed and cut to pieces. Cardinal Ximenes then returned to Alcala, where he was founding an university, leaving the command of the whole to Don Pedro Navarro, who, assuming the title of General of the forces, conquered the kingdom of Boujeiah, and forced the Beys of Tunis and Tremesan to become tributaries, as also the city of Algiers, until, passing his conquests too far, he suffered a defeat, and in 1510 was routed before Tripoli, when he lost several thousand of his best men. The Regent of Spain, however, being determined to carry on the war, declared he would go in person, and ordered vast preparations to be made throughout the kingdom. This had its desired effect of intimidating, for without striking another blow, it brought the Moors to submission, obliged them to restore all the Christian slaves, to become his vassals, and to pay him annually large tributary sums.

Oran was kept in possession by the Spaniards till 1708, when it was retaken; they, however, became masters of it again in 1732. In 1790 nearly the whole of the city was destroyed by an earthquake, wnen 2,000 persons perished; since which the Spaniards have evacuated it, and it is now in the occupation of the French.

Charles the First of Spain, with Don Lewis of Portugal, having together 140 ships of war and gallies, and 260 vessels of smaller size, also landed at Boujeiah in 1534, when they took the fortress of Goletta, the greatest naval and military deposit belonging to the Bey of Tunis, which the Spaniards retained till 1574, when Selim the Second took it from them.

In June last the French forces in Algiers amounted to 17,000 men, 4,000 forming the garrison of that place, conjointly with the 5,000 National Guards, and the remaining 13,000 were quartered in the different forts and advanced posts; and the present expedition preparing for Boujeiah will make, it is said, an addition of 4,000 more. All the officers to be employed on the occasion have been furnished with a map of the town of Boujeiah and its environs.

Geography of Mars.—In this planet we discern, with perfect distinctness, the outlines of what may be continents and seas. Of these, the former are distinguished by that ruddy colour which characterizes the light of this planet (which always appears red and fiery) and indicates, no doubt, an ochrey tinge in the general soil, like what the red sandstone districts on the Earth may possibly offer to the inhabitants of Mars, only more decided. Contrasted with this (by a general law in optics) the seas, as we may call them, appear greenish. These spots, however, are not always to be seen equally distinct, though, when seen, they offer always the same appearance. This may arise from the planet not being entirely destitute of atmosphere and clouds; and what adds greatly to the probability of this is the appearance of brilliant white spots at its poles, which have been conjectured with a great deal of probability to be snow; as they disappear when they have been long exposed to the sun, and are greatest when just emerging from the long night of their polar winter. By watching the spots during a whole night, and on successive nights, it is found that Mars has a rotation on an axis in a period of 24h. 36m. 21s. in the same direction as the Earth's, or from west to east.—[Sir J. Herschel on Astronomy.—Cabinet Cyclopædia.]

Archery.—In the "United Service Journal" we find the following account of archery as it *was;* which is curious, and seems to us to exhibit the *beau ideal* of the art and mystery, rather than any thing upon which one could strictly rely as facts, however supported by historical authority. It says:—

"The test of good archery with Edward VI. was that a hundred of his youth, in rank, should send, at one discharge, their hundred shafts clear through an inch board of heart of oak, at the distance of 240 yards. This was the minimum of military archery with youth. It was at the battle of Falkirk, in 1298, that the power of English archery became supreme. Edward I. interspersed his long bowmen among his other troops of every description, and the battle was little less than an unresisting slaughter of the best of the Scottish warriors. At the battle of Flodden Field the Scottish Monarch, enraged at the slaughter of his troops, directed sixty of his brave knights, in Italian armor, to rush on a body of the English archers, and at the first discharge, every knight was killed by an arrow through the body. P. de Comines, speaking of the military power of England, France, and Scotland, lays it down that 'the might of the realm of England standeth on her archery;' and it is curious to trace the excessive fastidiousness and care of our ancestors with respect to it. Edward IV. directed that the long-bow should be made of ewye, wyche hazel, ash, awnrub, or reason tree, but the ewye, (yew) was the preferable wood. The string was to be made of hide, gut, horse hair, woman's hair, hemp, or silk. The bow was directed to be the precise height of the archer, and one of six feet long was the maximum of power. The most anxious care was bestowed on the arrow. Its length was to be exactly half that of the bow. The feathers were not to be plucked from the goose, but were to drop from the bird at between the age of two and three years. Two of the feathers were to be from the gander, whilst the third, always placed uppermost in the act of shooting, was to be dropped by the goose. The arrow was pointed with flint or steel; and the punishment severe if the directions were in any respect violated. It was illegal, and, what was perhaps worse, it was disgraceful, to shoot at a less distance than 200 yards. The longest shot upon record was that of the Lancashire archer, who shot his shaft a mile in three shots. This has been nearly equalled within these few years. A Turkish Ambassador in London discharged an arrow 480 yards, and a Turk at Athens sent his shaft 584 yards, which is only three yards short of the third of a mile. It was a test with our archers to send the cloth yard shaft at 320 yards distance, through an oaken plank, from one to three inches in thickness, and to lodge the arrow in a board placed many yards in the rear."

This is good—we suspect a musket ball fired at 320 yards from a three inch plank, would, if it hit it, be satisfied with staying in it very quietly, and express neither a desire nor an intention of travelling to a board placed many yards in the rear, that day. Sending a shaft 584 yards is a wonderful thing, but sending it 350, with the intervention of a three inch plank, is what we suspect could only be done with a very long bow indeed.

POETRY.

TO MARY—IN ITALY.

And thus all things have comforting
In that, that doth them comfort bring;
Save I, alas! whom neither sun,
Nor aught that God hath wrought and done,
May comfort aught; as though I were
A thing not made for comfort here:
For, being absent from your sight,
Which are my joy and whole delight,
My comfort and my pleasure too,
How can I joy!—how should I do?

Earl of Surrey's Poems.

I WAIT for thy coming
In the sweet-scented eves,
When the birds are humming
In the gloom of the leaves;
And the fountain danceth,
Its path along,
Like a creature that loveth
To speak in song.
The bird and the fountain
Rejoice in their lot;
But my spirit is sad,
For I see thee not.

I wait for thee, love:
On the emerald deep
The sun, like a warrior,
Is sinking to sleep.
I see the leaves shining
Around the dove's nest.
Why doth she sit pining
Alone in her nest?
Her companion returneth
From the cool orange tree;
But thy feet return not—
Return not, to me!

I am weary of listening
To the voice of the breeze,
And the white bird glistening
Among the almond trees;
It leapeth on the boughs,
While its silver wings glow
With the light through the leaves,
As it darts to and fro.
I turn away in tears
From the fountain and tree;
I care not for bird or flower,
If thou comest not to me.

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

148 1am H. BURDEN.

MARRIAGES.

On Sunday evening, by the Rev. Mr. Ludlow, Mr. JONES, to Miss MARGARET ELBERT, daughter of Frederick A. Schaeffer, Esq. all of this city.

On Saturday evening, by the Rev. Dr. Westbrook, Sylvanus Rapelje, Esq. of New York, Deputy U. S. Marshal of the South District of N. Y., to Miss RACHEL ANN, daughter of the late W. R. Van Voorhis, Esq.

On Monday evening, Mr. JONAH NEWTON, formerly of Southborough, Mass. to Mrs. ISABELLA G. STEWART, of Scotland.

At Trinity Church, in New Haven, Conn. on Saturday, 9th inst. by the Rev. Harry Croswell, RICHARD R. CRAWFORD, Esq. of the District of Columbia, to Miss HARRIET A. daughter of W. H Jones, Esq. of the former place

DEATHS.

Yesterday, in the 74th year of her age, ESTHER ROGERS, widow of ARCHIBALD GRACIE.

Friday evening, Nov. 15, Dr. E. L. KNAPP, in the 28th year of his age.

After a lingering illness, JOHN MOREY, Esq. a native of Berkshire, Eng. aged 69.

On the 19th inst. after a lingering illness, in the 32d year of his age, CHARLES U. THERIATT.

On Saturday evening, Mr. WM. A. S. SMITH, painter, aged 32 years, after a long and painful illness.

Last evening, ANN W. wife of George Langdon Storer, in the 39th year of her age.

This morning, of Hæmorrhage of the Lungs, in the 34th year of her age, SUSANNAH MAGDALENE, wife of William Morgan, and daughter of Isaac Coutant, deceased.

In Morristown, New-Jersey, on Monday last, of scarlet fever, Miss PHEBE JOHNSON.

At Millstone, N. J., Nov. 18th, in the 84th year of his age, Capt. ABRAHAM VAN NEST, a soldier of the Revolution.

At Bedford Academy, Westchester County, on Thursday, the 14th inst., JOSEPH, eldest son of Joseph Hoxie, of this city, in the 13th year of his age.

At Hudson, on the 12th ult., Mr. JOHN GREENE, late of this city, in the 77th year of age

At Fort Gibson, Mississippi, on the 24th ult., of yellow fever, THOMAS B. REED, Esq., Attorney and Counsellor at Law, of Vicksburg, son of the late Thomas B. Reed, of the U. S. Senate, in the 22d year of his age.

At New Orleans, Capt. DAVID WHEATON, of the steamboat Whale.

On the 25th of September, at Southampton, (Eng.) Major PHILIP VAN CORTLANDT, in the 63rh year of his age.

BOSTON AND WORCESTER RAILROAD.

Proposals will be received until the 2d December next, for the GRADING AND MASONRY of the Third Division of the Road from Southborough to Grafton.

Further information may be obtained at the Company's Rooms, Nos. 7 and 9 Joy's Building, Boston.

n16 3t NATHAN HALE, Superintendant.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833. A29 tf RM&F

RAILWAY IRON.

☞ Ninety-five tons of	1 inch by	½ inch,	*Flat Bars* in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
200 do.	1¼ do.	½ do.	
40 do.	1½ do.	½ do.	
800 do.	2 do.	½ do.	
800 do.	2¼ do.	⅝ do.	
soon expected.			

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.

9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. n73meowr

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid. 81 R J M M & F

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January 29, 1833. } F3 tf

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In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

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I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
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For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio
Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

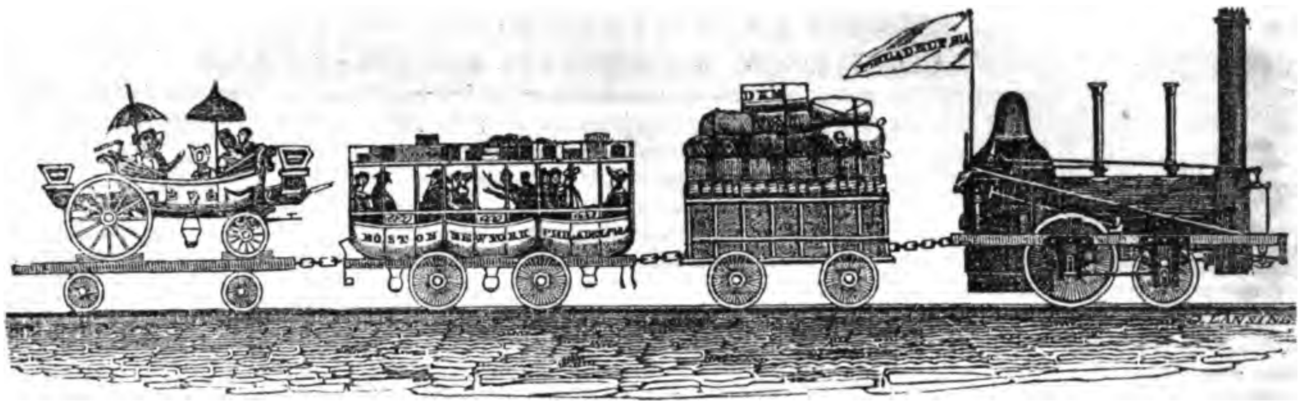
WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, NOVEMBER 30, 1833.

☞ For the Proceedings and Address of the New-York and Erie Railroad Convention, see pages 757 and 760.

Comparative Safety of Travelling by Steamboats and Railroads.—It will be recollected by most of our readers that we recently copied from another paper, two paragraphs, one in favor, and the other against the safety of *railroad* travelling, upon which we expressed an opinion that a much greater amount, both of life and property, has been destroyed, *in proportion to the business done*, by steamboat than by railroad accidents; and we have thus far seen nothing to change, but much to *confirm*, the opinion then expressed; indeed, several serious accidents have since occorred, so many indeed, that we were about to collect them together, by way of showing that our opinion upon the subject was not without the most conclusive reasons, when we found the following statement ready made to our hand in the Journal of Commerce. In making this comparison, we would disclaim the idea of a desire to prejudice any person against that delightful and expeditious mode of travelling by water, in steamboats; yet we would at the same time say, that we desire to guard from prejudice that more pleasant and more expeditious mode of travelling by land, which *now* bids fair to increase the comforts, convenience, and wealth of this country, in a ratio equal at least to that of steamboats and canals united; and at the same time endeavor to arouse the genius of our country to the rescue of the *life* and property of those who are, from circumstances, obliged to travel by steamboats and railroads.

We shall be indeed happy if our columns should be the medium of some plan, or invention by which so desirable an object shall be effected. We shall, as heretofore, continue to give, with the necessary drawings, such plans as may be submitted to us by gentlemen who have leisure and experience to devote to it, and therefore shall give in our next number one submitted to us by a gentleman of science, and, as we believe, much reflection on the subject.

Steamboat Disasters.—In looking over our file for the last *six weeks*, we find that we have recorded no less than *twelve* steamboat disasters, attended with a loss, in the aggregate, of more than a HUNDRED LIVES! they are as follows:

New England,—	boilers burst, -	16 lives lost
St. Martin,	burnt, - - -	30 or 40
Illinois,	boiler burst -	13 to 20
Thos. Yeatman,	do - -	7
Columbia,	sunk, - -	4
Paul Pry,	boiler burst, -	1
	Total,	71 to 88

Geo. Washington, wrecked; Rapid, sunk; Black Hawk, burnt; Peruvian, sunk; Chippewa, sunk.

With the exception of the New England, Geo. Washington, and Paul Pry, all the above boats plied on the western waters. The New England plied between this city and Hartford,—the Geo. Washington and Paul Pry, on the Lakes.

During the former part of the season there was an unusual exemption from accidents of this kind, considering the great number of steamboats (more than 300) constantly afloat in one part of the country or another; but the frequent and appalling disasters which have occurred within the last few weeks, will render the year memorable in quite another manner.

Is there no way to prevent the recurrence of such disasters; or at least, the destruction of so many lives? In the case of boats sinking or burning, except when suddenly blown up, a supply of *cork jackets* would save every life on board. And in case of the bursting of boilers, the safety of *passengers* might, we think, be effectually secured by adopting the mode of construction recommended by Professor Hare, of Philadelphia: i. e. by placing the boilers on the guards, with a strong breast-work of timbers between them and the body of the boat, and only such a thickness of plank outside the boilers as should be sufficient to protect them from the water. The shipping of powder on board steamboats employed for the conveyance of passengers, should be prohibited under the severest penalties; and the smuggling it on board without the consent of the captain, should be punished with death. But our object is not so much to suggest means of preventing such disasters and securing the safety of passengers, as to express a hope that Congress will take up the subject in good earnest at the approaching session, and adopt such measures as the collected wisdom of the nation may devise. We own we should wish, if possible, to avoid legislative interference in such a matter,—but things have come to such a pass, that something must be done, or this expeditious and delightful mode of travelling will lose its attractions. Why is it that English steamboats are so safe to travellers, and American steamboats so unsafe? Why is it that more lives are lost on board American steamboats in one year, than on board English steamboats in ten years? Cannot the difference be partly accounted for by the fact that, in England, very strict regulations are prescribed and enforced by the government in relation to steamboats, and in the United States none? If not, can any man tell how the fact is to be accounted for?—[Journal of Commerce, Nov. 23.]

Undulating Railways.—We find in a Liverpool paper, received by the Roscoe, an account of experiments made by Mr. Badnall upon the Liverpool and Manchester railway, with two locomotive engines and a train of 13 cars, which appear to have made proselytes to the cause amongst some of the eminent engineers of the day. The plan of Mr. Badnall, who, by the by, we understand is an American, (a Yankee, of course,) is exciting, we perceive no small degree of interest. It has brought out one of our most valuable correspondents, whose communication will appear in our next. It is, indeed, a matter of vast importance to this country that the *truth* of the principle should be settled, and we may also add the *affirmative* of the plan established, as it would, if so established, save a vast amount which will otherwise be expended in excavations, embankments, engines, and circuitous routes, to overcome and avoid elevations and depressions.

May we not hope that some light will be communicated to those so deeply interested in its success through the RAILROAD JOURNAL? A work which, we trust, will not be *hereafter*, however it may heretofore have been, *undulating*, for want of patronage sufficient to defray its *necessary* expenses; that is, of *materials and labor*.

On destroying the Bad Effects of Smoke from Wood, Coal, &c. By **Watson Farris.** To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

Sir,—I have recently ascertained by experiment on light, heat, &c. that by a very simple constructed furnace, I have succeeded in destroying all the bad effects of smoke raised from wood, coal, or other fuel, and thinking it may be beneficial when applied to steam carriages, I am induced to write to you for information, as my business will not allow me to visit the city of New-York very soon. You will excuse me for addressing you on the subject, as I have not sufficient knowledge of steam carriages, or of the people who are interested in them, to pursue a more proper course; and you will confer a favor on me, whether the improvement is beneficial or not, to give me a letter in answer as soon as convenient. Respectfully, **Watson Farris.**

Nantucket, 11mo. 15, 1833.

[If our correspondent has accomplished the construction of such a furnace as he describes, he will render an essential service to the world by taking measures to bring his invention into immediate practical operation. If he purposes to secure a patent, we advise him to do it forthwith; and when we can publish a full description of it, with such drawings as may be necessary, without prejudice to his interest, we shall gladly do so, if he will favor us with them.]

Internal Improvements, No. II. By F. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

Sir,—To reflecting minds it is a matter of astonishment how little influence the dissemination of knowledge on this all important topic of interest has exercised in tempering the judgment of speculators; how little effect it has produced in the correction of errors that ignorance alone can palliate; and how little regard it has excited in the present as a warning against the experience of the past. This infatuation, if so it may be termed, in its effects so prejudicial to the true interest of the cause, is mainly ascribable to the spirit of rivalry, but has of late prevailed to such an extent among advocates of different modes of inland communication, and until this spirit be quenched it is much to be feared that examples, however numerous and fatal their consequences may be will continue to pass by unheeded; the same errors will be committed and the same rewards attend the acts of the designing stock-jobber. For it is this misplaced excitement that has caused the minds of men to stray from the path of common sense, and by bias of either one favorite project or another, led them into speculations, and realized blunders and mistakes, which, for absurdity and extravagance, can scarce find a parallel. It is now time that the reign of ignorance should cease, and that intelligence under the guidance of sound judgment should assume the sceptre, to mark out the path and direct our exertions to the development of those riches which nature has so prolifically bestowed on us.

The beneficial effects resulting from a well organized system of internal communications are now generally acknowledged by all classes, and it is therefore only necessary in this place to lay before you an investigation of the different means resorted to for producing those effects; and to point out, in as brief a manner as the nature of the subject will admit, their particular adaptation to the several cases in which they may be applied successfully for that purpose.

It was not until the time of the ancient Romans, that any material improvement was effected in the primitive means of intercourse between distant places. It was then, when extensive military operations demanded additional facilities for the transportation of armies with their necessary accoutrements, that the works known under the name of *Viæ Romanæ* were first introduced. These works are universally characterized by marks of grandeur, permanency and utility, that every succeeding age has admired, and which the havoc of time, during an interval of exceeding two thousand years, has scarce been able to efface. It may not be deemed irrelevant to our subject to occupy a few moments in noticing the *modus operandi* pursued in the construction of these noble monuments of antiquity; which, while serving as a parallel to judge that now adopted by modern nations, may, at the same time, act as a guide to their future improvement. As to durability, we cannot hope to dispute the palm: and our claim to excellence, if any we have, must rest upon improved principles as modified by economy in construction. It must be remembered that the Romans were a warlike nation, despised commerce, and placed their whole reliance for maintenance in their scabbards; and in constructing works of this character, their advantages in a military point of view were alone regarded. If these could be made manifest, no obstacles of a fiscal nature could for a moment militate against their expectation. Men and means were forthwith provided, and the work was soon in a rapid state of progression. But the revolution that has since taken place in the organization of civil society renders the construction of similar works in one day next to impossible; and although we may no longer hope to see the spirit of former times emulated in the present, by the erection of monuments to ennoble our country and to record its genius, we may hand down to posterity such memorials and devices of the present age as the love of gain may suggest for the furtherance of individual interest.

But to return to our subject. These ways were commenced by making a deep excavation of the necessary width. Either side of this excavation was then protected by walls erected for the purpose, and crowned with parapets, to give solidity to the way and to serve at the same time as an elevation for the convenience of those who travelled on foot. The space between the walls was then filled with layers of different materials, cemented together by a mortar made of the volcanic produce called puzzalano. Above these materials, thus formed into a solid bed, they placed the hardest stones that could be procured, constructing their salient angles so as to form a large mass, and cementing them together as before. At certain intervals they placed stones of a greater height than the parapets for the convenience of horsemen. The ways were then ornamented with temples, monuments, and shrubbery; and the distances marked on columns of stone. Some idea may be formed of the time and labor bestowed on these works, when it is remarked that, in the construction of the Appian-way, the hardest quality of stone was used that could be procured, which were smoothed and squared under the hands of the most skilful workmen, and joined together so nicely that the lines could scarcely be traced, and the appearance for miles was that of a single unbroken slab.

It is not contemplated in this place to trace the history of road making through its different gradations down to the present time; indeed, such a narration, independent of its want of interest, would be but a record of blunders founded on erroneous systems and mistaken principles. Telford and McAdam are undoubtedly the individuals of all others the most entitled to commendation for such improvements as now exist in the modern method of construction, and although the former's plan has since entirely given way before that of the latter, it still lays claim to some attention as an improvement on that of his predecessors, and perhaps as a preliminary step to the elucidation of those principles which were afterwards made known by his successor.

His plan consisted in first paving a foundation seven or eight inches in depth with rubble stone, laid in contact with each other on their flat and broadest sides, and paving their sharp points up. On these a covering of clean gravel and very small fragments of stone were laid to the depth of four inches, and rammed into the interstices of the paving until the whole was solidly imbedded in a mass. The road-bed presented by this process was sufficiently solid; but both more expensive and less enduring than that adopted by McAdam; and on a careful examination and comparison of the two methods, it will appear that it was moreover characterized by faults, on the absence of which all the fundamental principles of good road-making depend; and that, without their correction, no road, however faithfully executed, could possibly for any length of time retain its solidity of structure and evenness of surface. This, however, may be better explained after laying down Mr. McAdam's plan.

The stones most generally made use of in constructions after this plan are flint and limestone; the first because of its greater durability, the second because of its greater facility of amalgamation. These stones are to be broken in fragments of not exceeding two inches in thickness either way, and laid on a surface previously prepared for its reception by a covering of gravel to the depth of six inches. This is called the first layer, and is to remain for the space of two months, when a second layer of the same material and four inches in thickness is to succeed; and again, at the expiration of two additional months, a third layer, in all respects similar to the second, finishes the work. Due attention must be observed in the interim to preserve the surface even until the whole body becomes consolidated,—to prevent the introduction of round pebbles which render a complete amalgamation of the angular stones impossible,—and above all, to exclude from the superstructure, earth, clay, and chalk, which being absorbents either hold or conduct water to the soil, and thereby cause its speedy destruction. This system is based on the presupposition that the native soil, when perfectly free from moisture, is capable of sustaining any amount of pressure without yielding. A moment's reflection will convince of this fact, and once admitted as an axiom, it requires no further argument to demonstrate that the solidity of a road bears no proportion to, and is altogether independent of, the thickness of the superstructure, and that its permanency, where the crust has been rendered perfectly impervious to water, depends entirely on the character of the stone used in its construction. It is a misapprehension on this important point that has been at the bottom of all the failures in the attempts at McAdamization made in this country. Stones are broken up in fragments of the requisite size, but sufficient care is not observed in the formation to exclude all such ingredients as can in any way act as conductors or absorbents. The mal-effect of the introduction of such ingredients is almost too obvious to need explanation. The moment that frost appears, the expansion, by congelation of the water absorbed, displaces the materials of which the road is composed, and thereby furnishes a passage to the soil for the deposite of under water. Directly this effect is produced the soil is effected, gives way, and deprives the crust of its natural support, when, as a consequence, it must necessarily go to ruin. The same effect is apparent in Telford's plan, by the introduction of *pebbles* in the superstructure; and the Romans, though guarding against it by the nicest workmanship, were evidently ignorant of the fundamental principle, that the native soil must sustain the whole pressure of the superincumbent weight.

The time that should elapse between the deposition of the different layers of the road is, of course, dependent on, and varies with, the amount of travel upon it. The principal care should be in a due observance that the surface of each distinct layer be preserved in a uniform state of smoothness, and that the layer be fairly consolidated before it is charged with the superincumbent covering.

A rigid adherence to these instructions cannot fail in producing a road of the greatest durability and uniformity of surface; and it is matter of no little surprize and vexation to us, that, notwithstanding the plain and simple manner in which McAdam has laid down and elucidated the principles of his system, and the particular directions which he has furnished for carrying them into execution, men should be found so pertinaciously bent on pursuing their own crude notions as to disregard them *in toto*, and in violation of all common sense and experience, to multiply absurdities that the merest tyro might detect.

It is reasonable to ascribe the commission of these absurdities to the ignorance of superintendants; but if not, they must emanate from a less venial source: and in either case it is high time that such measures be taken as will place the construction of roads hereafter in more competent hands, so as to insure to the public, at least, a more satisfactory expenditure of their money, than, we regret to add, it has been their fate yet to acknowledge. The faults in Telford's plan have been fairly pointed out and explained—why not correct them? McAdam's system has been experimentally proved to be the best, whether it be regarded as to quality, durability, or economy in construction—then why not adopt it?

We might enlarge this subject to a much greater extent, and numerous examples might be adduced in corroboration of what is stated above concerning the inefficiency of persons engaged in the construction of public roads; but this Journal is already so rich in materials of this description that it would be superfluous to add any thing further here, and we therefore take our leave in recommending the numbers alluded to to the careful perusal of all persons interested in the subject, with an assurance that their time will be fully compensated.

F.

New-York, Nov. 23, 1833.

On Objections to the Received Theory of Rain.

By U. A. B. [For the American Railroad Journal and Advotate of Internal Improvements.]

An article in the 44th number of the Railroad Journal, entitled "Objections to the Received Theory of Rain," taken from Field's Naturalist's Magazine, contains some sentiments that are not perfectly accurate. As you are desirous of correcting all errors, more especially such as have appeared in your publications, I send you a short comment upon that article.

The author expresses the theory which he objects to in the following words: "It is the received opinion that rain is caused by the heat of the sun's rays raising water in a state of vapor into the higher regions of the atmosphere, and, being there condensed by the cold, descends again, and thus forms rain."[1] It has always been admitted that water sometimes rises in the atmosphere in the state of vapor, in the absence of the sun's rays, though not often in large quantities. Aqueous vapor is condensed into snow or drops of water, in the lower as well as in the higher regions of the atmosphere, when the quantity of vapor is great and the temperature reduced sufficiently. The first objection there offered is as follows: "That water requires a heat equal to sixty degrees of Fahrenheit's thermometer, to raise it into vapor, according to the commonly received opinion, when experience proves that we have the most rain when it stands below temperate, which is 55 degrees; for instance, the snow in frost and the rain after." Aqueous vapor exists in the atmosphere at all temperatures, though the warmer the air is the larger quantity can be suspended in it. It was formerly supposed that the atmospheric air had an affinity for water, and that this affinity of the air for water increased in such a ratio, that, as the temperature of the air increased in an arithmetical progression, the quantity of water which the air could hold in solution increased nearly in a geometrical progression. But the experiments on this subject made by Dalton, Clement, and some other modern philosophers, have convinced most people who have attended to the subject, that the watery vapor which exists in the atmosphere, is not chemically combined with it, but that it is a gas which supports its own weight independently of the atmospheric air; and that the same space could contain no more of this vapor if the atmospheric air did not exist; that is, when a vessel is exhausted of the air, it will hold no more vapor than when filled with air. But I have reasons to believe that the aqueous vapor is not totally independent of the atmosphere; that, at least, some of it is chemically combined with the air, and that it meets with some difficulty in passing through it. The space which the particles of air or vapor occupy is very small, compared with the interstices or spaces between the particles. The elastic force of this vapor, and consequently the quantity of water which can be suspended in the air, increases as the temperature increases. At the temperature of 55°, its elastic force is sufficient to support a column of water 6·01 inches high; if a greater pressure than this be applied to the vapor, it will be condensed into water; hence, when the temperature of the air is at 55°, which is the same as that of the vapor which exists in it, it may support a quantity of vapor which is equal to a sheet of water 6·01 inches in thickness; if the quantity of vapor over any part of the earth's surface exceeds this, while its temperature is at 55°, it will be condensed into water. The wind, by agitating the vapor, may produce a rather greater, or rather less pressure on it than the weight of its superior part; hence the quantity of vapor, which may be sustained in the atmosphere, may be a little different from that above assigned. At the above mentioned temperature and pressure, the weight of a cubic foot of vapor, or the quantity contained in a cubic foot of air is 5 1-1000 grains. As the temperature of the vapor diminishes in an arithmetical progression, its elastic force diminishes nearly in a geometrical progression; so that at zero its elastic force is sufficient to support only a weight of vapor equal to a sheet of water 0·83 inches thick. When the pressure on any place is greater than the elasticity which corresponds to its temperature, it condenses into drops of water. When the temperature of water is higher than the temperature which corresponds to the pressure on it, produced by the incumbent vapor, the water evaporates.

Several theories of the condensation of vapor into drops of water have been advanced, but they have been strongly opposed. The causes assigned seem hardly adequate to the production of as large quantities of rain as frequently happens. I will therefore state what I suppose to be the greatest cause of the sudden condensation of aqueous vapor. There is much proof, which it is not necessary to detail here, that the aqueous vapor which exists in the air does not always move at the same velocity with the air, or even in the same direction; hence the vapor, by passing into cold air, is condensed into rain. The assertion that there is more rain (including snow) in cold, than in warm weather, seems to be at variance with known facts; though perhaps it may be true as applied to some particular places. According to the experiments of Mr. Hoyle and Mr. Dalton, made during three successive years, the mean quantity of rain in the three winter months, was equal to a sheet of water 7·46 inches in depth; and the mean quantity during the three summer months, was 10·18 inches.

His second, third, and fourth objections need no further consideration than I have already given in treating his first.

His fifth objection is as follows: "There is no vapor arises from the water when the sun has the most influence; for, place a looking-glass over a river, when the sun shines with its meridian force, and it will not so much as dim it; but when the sun is gone down. the vapor rises so as to be visible." During the hottest days, the rivers and ponds are much cooler than the air or any small body which has been exposed to the rays of the sun, at a little distance from the earth or water. It should not be supposed that the vapor would be condensed on any thing which is warmer than that from which it had just arisen. I suppose that the fact that water evaporates faster during the heat of the day, than in the night, was too obvious to be questioned. It requires a long time for large bodies of water to warm or cool, therefore the water, especially in the fall, is usually warmer during the night than the air; for this reason, the vapor which rises during the night frequently condenses so as to produce fogs near the water. It sometimes happens that fog is produced by warm damp airs passing over cold water; this fog *seems* to arise from the water, though it does not. In the spring, when the air is very warm and damp, in its passing over something which will absorb the heat rapidly, as a pond, or a bank of snow, which is more effectual, the vapor is condensed into fog, which has very much the appearance of arising from the snow or water.

His sixth and last objection is this: "If the old theory be true, there would always be the most rain in the tropics, where the sun is vertical, which is not the fact." Evaporation is generally much more rapid in warm than in cold climates; but much of the water which rises in the state of vapor in warm climates is carried to colder regions, where it descends as rain. But there is generally a larger quantity of rain in warm than in cold climates. According to the observations of M. de Costanzo, the quantity of rain which falls annually at Vera Cruz, in latitude 19° 12′, is 62½ inches. According to Dr. Young, the quantity of rain which falls at Charleston, S. C., in latitude 32° 40′, is 50 9-10 inches. The usual quantity of rain which falls at Perth, in latitude 56° 23′, is about 21½ inches. In places where the temperature is nearly uniform, a quantity of vapor is produced as great as the temperature can sustain, when evaporation would cease if the vapor were not transported to some other region. In climates subject to great changes of temperature, a sudden diminution of temperature in some part of the atmosphere, will produce a copious rain if that part of the atmosphere be damp, which by diminishing the quantity of vapor, will cause evaporation to go on rapidly. In England, where the temperature of the air is not subject to such great changes as in the United States, the air is usually damp, evaporation is slow, and the quantity of rain less than in most parts of the United States. U. A. B.

Lowell, Nov. 12, 1833.

On the Southern Termination of the Boston and Providence Railroad. [For the American Railroad Journal.]

Mr. Editor—Respecting the southern termination of the Boston and Providence Railroad, you copied an article in the Journal of Nov. 2, from the Boston Daily Advertiser, by "A Boston Stockholder," in reply to some remarks in your Journal of October 12; and as the writer does not comprehend my views, I will make an extract from that communication in order more fully to explain them, viz.:

> "It is suggested that this road may terminate in Massachusetts, opposite Providence, and may be connected with the Stonington road by a ferry below the city of Providence. By this mode the trade of Providence would not only be greatly inconvenienced, but the travel and transportation to New-York, via Stonington, would be, in a great degree, impaired. Not only would the distance be increased considerably, but the ferry would be an insurmountable obstacle at some seasons of the year, and an objection at all seasons. If the Rhode-Island Company are not permitted to enter the Boston and Providence road on equitable and reciprocal terms, will not some other mode be discovered to continue the Stonington road to Boston, to accommodate the city of Providence and the New-York travel? Some persons may not think so, but I have no doubt there will, from what information I can collect; and I would ask the Directors of the Boston and Providence Company to pause before it is too late, and prevent the consequent evils that must ensue to the stockholders, if there is not a mutual good understanding. There is a harmony of interest between the several companies which demands of each that it promote the interest of the other."

The writer, "A Boston Stockholder," in answer says, "There are always two sides to every story." That is true; there always is a right and a wrong side. He thinks "the writer has hastily entered his protest against locating the southern terminus in Massachusetts." On review, he will find that he has not read correctly (perhaps he has read "*hastily*;") that I do not protest against the termination of the road in Massachusetts: and were it not for this erroneous construction, his remarks generally would appear to be, as they in fact are, inapplicable to the main position taken in mine of Oct. 12—that of locating the road to accommodate the city of Providence, the public generally, and the New-York travel and transportation via Stonington.

The writer lays great stress upon locating the whole road in Massachusetts. It seems difficult to understand how a Massachusetts railroad should terminate any where but in Massachusetts; and it seems equally difficult to know how a railroad, going into three states, should be solely within the jurisdiction of any one.

The object I had in view in writing, was to promote the true interest of a continuous line of railroad from Boston to Stonington, thereby furnishing a route to New-York far superior to any other that can be effected. Should, however, narrow views and feelings predominate, and an exclusive spirit be adhered to, this road may be ruined by an effort to monopolize all the advantages to Massachusetts and their own company, that should be common to the several companies and the several states. It has been the policy of Bostonians generally, to endeavor to discourage this enterprize and promote the Worcester railroad, preferring rather to get a road through to Albany or Hartford, or even Norwich, (thereby extending their intercourse with the interior), than to bring that city much nearer to New-York by such an improvement.

The true interest of the state of Massachusetts, not less than the interest of the stockholders, demands that this road be well located, to unite and promote all interests, as it derives as much benefit by the business and growth of Providence as it would from any place built up at the expense of that city. There has been a large amount of business transacted between the cities of Boston and Providence, and the continuance of it depends upon a liberal spirit and a liberal policy, as New-York is desirous of cultivating an extension of trade and intercourse with that city.

Provided the Boston and Providence Railroad Company allow a union of their road with the roads in Rhode-Island at such place and places as business may demand, it is quite immaterial where they carry or where they end their road; the business would take its natural channel, and the loss to the company be limited to that part of the road which should be unnecessarily built.

The objection of being under the jurisdiction of different states, if an evil, is inevitable; but practically it does not prove to be so, as we find the different states uniting to promote a common object. Rhode-Island and Connecticut have united their roads, and I have no doubt that Massachusetts will pursue a like honorable course. That the legislature of Massachusetts will not act upon narrow principles we have assurances of, in their reservation of their authority to permit other railroads to enter the Boston and Providence, wherever they shall deem expedient; and will most certainly exercise their power, if the Boston Company should act upon exclusive principles. We are aware of the progress made in locating the road, and the opposition manifested by the directors of the Boston and Providence Company to a union with the Rhode-Island road; and should the present board of directors make any serious mistakes, it will remain for the board that comes after them to repair the damage as well as they can, and I hope it will not be too late to prevent irreparable injury.

I did not lay much stress on increased distance, though it is important, every thing else being equal: nor do I upon the additional expense, as the engineer and agents of the work no doubt find money plenty enough. But I do lay great stress upon compelling (if it were practicable) passengers and freight to cross a ferry when it is unnecessary. We all know the inconveniences of a ferry. A hundred tons of freight to be passed over, and a detention takes place; in the mean time passenger cars arrive; passengers are delayed and aggrieved. Nothing appears more idle or frivolous than to *prefer to cross a ferry* when there is a clear way open; and notwithstanding very wise men may advocate it, yet the time will come, should this mode be adopted, when the stockholders of both roads will be fully sensible of it, and have cause to remember with much regret, the fallacy of that reasoning which produced it.

The mill dam at Boston was built by a person who was at the head of his profession, and enjoyed public confidence; he wrote a book to demonstrate the profit and utility of the enterprize; besides other sources of revenue, an almost unlimited amount of water power was to have been gained. It was carried forward by infatuated men, who, had they exercised their own common sense, would have been spared the consequent loss; but this they abandoned to the schemes of this *scientific* theorist.

A like result will no doubt attend the various wild projects to connect the Boston and Providence with the Stonington railroad, which may be classed, in point of absurdity, in the following order:

1. To connect the two roads by a dam below Providence.

2. To connect them by a bridge with a draw.

By the above modes, the entire capital of both companies would not be adequate to pay half the damage to the city of Providence.

A third mode is to ferry across the Providence River; by some it is proposed to cross at Kettle's Point, by others at Fox Point, the former several miles below Providence, and in winter would be subject to obstructions by ice, and continually subject to great expense.

"A Boston Stockholder" disposes of the reasons assigned against "increased distance and ferry transportation" in a summary way, by saying they "are not of a serious character;" the public have claims to the reasons, rather than the mere opinion of an anonymous writer, who, though he says he has devoted much time to the subject, appears to have but a superficial acquaintance with the point at issue, viz.: the best mode of uniting the Massachusetts with the Rhode Island Railroads.

It appears a waste of words to talk of ending the road three miles from Providence to accommodate that city, and cross a ferry, that is unnecessary, to promote the travel to New-York.

Provided the Boston and Providence Railroad Companies should not form a union with the Rhode Island Companies, another route nearer, and no doubt less expensive may be found than the one they occupy, and what security can the Boston and Providence Company have so effectually to prevent this as a union with the Rhode Island Companies, availing themselves of their exclusive privileges.

It may be said that there is no objection to have a spur at Providence, and another at Pawtucket, let that be done and the argument as to public accommodation will cease.

"A Boston Stockholder" appears ignorant of a petition of the Boston Company to the Legislature of Rhode Island for the purpose of going into Providence.

Why ask for another charter when one already exists with ample privileges? It may be to avoid paying for one turnpike and paying damages to another; but a more conclusive answer, probably, is they want the charter under their entire control to subserve some speculative purposes, either in land at Providence, or to promote a favorite object of building up a town in Massachusetts.

Why such an array of names, when their request appears so moderate, so reasonable, and as the petitioners contend, for public benefit! Is it not that they may by an overwhelming influence attain their object, and more effectually overawe and resist a company who already hold a charter which secures, and secures exclusively, the very privileges they ask for. I feel a very high respect for the character of the petitioners generally, who I believe are ignorant that they thus trespass upon the rights of another company, and I seriously ask those gentlemen to examine the subject, and if they find they are doing manifest injustice, to withdraw their names from that petition; or if they wish to promote the best interest of the whole city, rather than an isolated point at a distance from the centre of business, then also would I ask them to withdraw their names from that petition.

The Providence and Boston Railroad Company have undeviatingly devoted themselves to the true interest not only of the several companies, but to Providence and the State of Rhode Island also, by endeavoring to form a union of the roads, and have no slight claims on the Legislature of Rhode Island to guard and protect them, and we trust they will be protected, as the honor, interest, and dignity of the State demand.

This company have for years been urging a union of the roads upon the Massachusetts Company, and that the public may better understand the course pursued and object desired, I will give the substance of a recent proposition to which they have received no reply.

"The Providence and Boston Railroad Company proposed to the Massachusetts Company an amalgamation of the stock of both companies, making a joint stock." Provided the foregoing was not acceptable, it was proposed

"That the several roads be united, each company travelling on the road of the other at the same rate of toll, subject to the same regulations," and to prevent so desirable an object to the interest of both companies being defeated, it was proposed further,

"That, in case the two preceding propositions should not meet the views of the Boston and Providence Company, they propose any mode more agreeable, which, provided it be equitable and reciprocal, will be assented to."

More Hereafter.

New-York and Erie Railroad Convention.—We are gratified to find that the friends of this very important, and justly termed National improvement, are resolved to urge its claims upon our State legislature for aid to carry it at an early day into operation. It seems to us that argument is unnecessary to convince any *disinterested and unprejudiced* man, or body of men, of the importance of the contemplated work, or of the just claims of the inhabitants of the southern part of the State, to an equal share with their more fortunate northern neighbors, in the execution of works of public utility, more especially to such works as this, which will contribute to the prosperity of so large a territory, and so numerous and industrious a population.

We shall have much more to say upon this subject hereafter.

NEW-YORK AND ERIE RAILROAD CONVENTION.

Proceedings of the Convention of Delegates from the south and southwesterly counties of this State, held in the city of New York, on the 20th, and continued, by adjournment, till the evening of the 21st of November, 1833, on the subject of a railroad from this city through the southern tier of counties to Lake Erie, as contemplated in the charter of the New York and Erie Rail Road Company.

The Convention was organized by the election of the following officers, viz:

His Honor Gideon Lee, Mayor of the City, President.

James Pumpelly, Esq. of the county of Tioga, and George D Wickham, Esq. of the county of Orange, Vice Presidents.

William W. McCay, of the county of Steuben, and David Ruggles, of the county of Orange, Secretaries.

The following gentlemen attended, and were recognized as delegates and members of the Convention, viz: from the county of

Chatauque—Thomas W. Harvey.
Cattaraugus—Anson Gibbs.
Allegany—Henry H. Cruger.
Steuben—William W. McCay and Ira Davenport.
Tioga—James Pumpelly, Theodore North, and Latham A. Burrows.
Otsego—Hon. Sherman Page.
Cortland—Hon. Samuel G. Hathaway.
Delaware—Hon. Noadiah Johnson.
Broome—Joshua Whitney and William M. Waterman.
Sullivan—Platt Pelton and Hiram Bennett.
Orange—George D. Wickham, Moses Philips, and David Ruggles.
Rockland—Cornelius I. Blauvelt.
City of New York—Goold Hoyt, Eleazar Lord, Benjamin Wright, Richard M. Lawrence, Samuel B. Ruggles, William G. Bucknor, John Duer, Silas M. Stilwell.

C. L. Livingston, Esq. of the Senate, and Messrs. Myers, Hertell, Titus, and Hone, members of the Assembly, having been informed of the meeting and objects of the convention, were present during a part of its sessions.

The objects of the meeting having been stated, and a full report having been made of the proceedings recently adopted on the subject of the Railroad in the several counties on the route, by a member who had lately visited them, committees were appointed to prepare a petition to the Hon. the Legislature of the State, for aid to the proposed work, and suitable resolutions for the consideration of the Convention.

The Committee on that subject reported the following resolutions, which, after the views of several of the members had been expressed, were unanimously adopted:

Resolved, That the construction of a Railroad from the city of New York to Lake Erie, as proposed by the New York and Erie Railroad Company, is, in the opinion of this Convention, an object of the highest importance to the commercial interests, growth and prosperity of the State, and especially of the southern tier of counties, and the city of New York.

Resolved, That such a thoroughfare is most urgently required through the southern counties of the State, which have no facilities of communication with the Atlantic; and that such a work, being alike eligible for travel and transport in winter as in summer, and connecting our commercial metropolis with the Lakes and Western States, by a short and direct route, would be productive of results no less beneficial than those of the Erie Canal.

Resolved, That the construction of the proposed Railway is called for, and recommended at the present period, by the immediate interests of the counties on the route, and the prosperity, and advancement in population, agriculture, manufactures, trade and wealth, to which their relative position, climate, soil, and other natural advantages, adapt and invite them; and by the consideration that the Erie Canal has so far surpassed all anticipation, in respect to its local and public benefits and its productiveness of revenue, as to justify and sanction the expediency of the proposed work; and in respect to the demand for its use, as to be even now scarcely capable of passing the commodities which seek conveyance on it from its populous and fertile borders, and from the states and territories beyond its western termination.

Resolved, That the expediency and importance of the proposed Railway, in its relation to the growth and prosperity of this State, and especially in its relation to the vast and rapidly extending interests of our trade and intercourse with the Lakes and Western States, is evinced by the arduous and powerful efforts of individuals, corporations and public authorities, to direct that trade and intercourse through other States and to other commercial ports, by constructing Canals and Railways on far more difficult and more extensive routes, in the confidence that if such diversion can be accomplished, no measure which can afterwards be adopted in this State will retrieve our loss.

Resolved, That the same view of the subject is enforced by the measures of the British government for securing the commerce of the Lakes to the ports of Canada, by opening Canals for large vessels around the rapids of the St. Lawrence, and perfecting the sloop Canal between Lakes Ontario and Erie.

Resolved, That the evident merits of the proposed work, its objects, its relative bearings, and all the considerations of public and local benefit which it involves, recommend it to the favor and confidence of the people and government of this state not only as capable of adding more to her natural and commercial advantages, and the fame of her liberal policy, than any other work now possible within her limits, but as the noblest and most valuable thoroughfare from the Atlantic to the West which is possible within the limits of the Union.

Resolved, That in the opinion of this Convention, founded on local knowledge of the several counties, on the survey for a state road made under the authority of the Legislature in 1825–6, and on the examinations and surveys more recently performed by engineers of the United States, the entire route of the proposed Railway is practicable, presenting no very formidable elevations or other physical obstacles to be overcome, and with respect to a large portion of the distance, affording unusual advantages and facilities for the object.

Resolved, That the most liberal encouragement and aid of this undertaking are due from the inhabitants and proprietors on and adjacent to the route, on account of the local and permanent benefits of the work to them, in augmenting the value of their lands, occasioning rapid accessions to their population, extending their agriculture, manufactures and trade, enhancing the value of all the products of their soil and industry, and multiplying the means of moral and social improvement; and that it be earnestly recommended to them to assist and co-operate with the Company in the measures which are necessary in the promotion of the enterprize.

Resolved, That this Convention regard the proposed work as involving the strongest claims on the countenance and patronage of the Legislature, on account of its extending near 400 miles through so valuable a portion of the State, and connecting our mart of commerce with the Lakes and Territories of the west, its merits as a thoroughfare of business and intercourse, requiring for its construction a large expenditure of capital, and its location through a range of healthy and fertile counties which are favored with no adequate or even tolerable facilities of access to market.

Resolved, That in the opinion of this Convention, the Southern tier of counties, which contain between Lake Erie and Hudson River, about 7,000.000 of acres, and a population of about 300,000, are entitled, by their extent, their relative position, their co-operation in the great public works in other parts of the State, and every view of equity and of common interest and benefit, to look to the Legislature for a liberal share in the policy of internal improvement, and especially for facilities and aid, in respect to the proposed thoroughfare to the city of New York, by which they may be placed on a footing corresponding in some measure with the advantages conferred by Legislative liberality and the funds of the State on the more northerly counties.

Resolved, That this Convention highly approve of the intended application, on the part of the Company, to the inhabitants and proprietors on and near the route, for cessions of the land and materials necessary for the location and construction of the Road, and for donations of lands and money in aid of the work; and that it be reccommended to the inhabitants, in consideration of the benefits of the work, and of the necessity of all the aid and support they can render, to accede to such application by prompt and liberal grants, on condition that the Rail Road is completed through their respective districts in conformity with the charter.

Resolved, that it be earnestly recommended to the inhabitants of the Southern Counties to support by their petitions an application on the part of the Company to the Legislature of the State at its next session, for aid to this work by way of subscription to the capital stock.

Resolved, That with the patronage and aid of the Legislature and the harmonious co-operation of the counties on the route, there is, in the opinion of this Convention, abundant ground of confidence in the success of this undertaking, and in its productiveness; that the territories on either side, within 40 miles of the road, comprising an area, without including the first 50 miles from Hudson River, of 28,000 square miles, or about 18 millions of acres, will furnish it abundant occupation, without detracting from the utility or the revenues of the Erie Canal; and that it will be productive of incalculable benefits, without detriment to any other section of the state.

Resolved, That the city of New York is, in the opinion of this Convention, directly and vastly interested in the accomplishment of this work, considered as the shortest and most eligible thoroughfare of trade and intercourse with so extended a region of the interior, and with the lakes and western states, during the whole year; and as a new avenue from the remote interior, which, without impairing the use or value of existing channels will originate an immense amount of business on its route, and accommodate and secure to this port the growing commerce of the waters and territories of the west, and which, by its facilities and relations, will supply what in respect to the competition of other sea ports, is wanting, to the advantage of this commercial metropolis, and add incalculably to its trade, population and enduring prosperity.

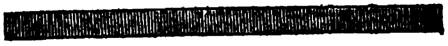
[*See page* 760.]

Of the Orders of Architecture. [Continued from page 615.]

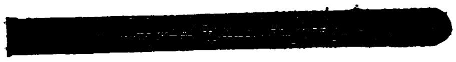
MOULDINGS.—Mouldings are those parts which project beyond the face of a wall, a column, &c. and are employed as ornaments in most Architectural operations.

The regular mouldings are eight in number, and are represented by the following figures.

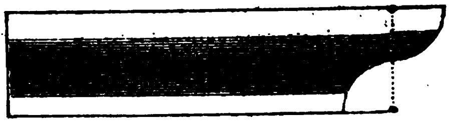
Annular List, or Square.



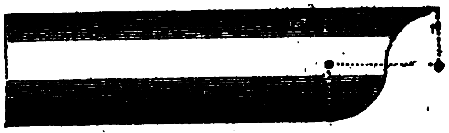
Astragal, or Bead.



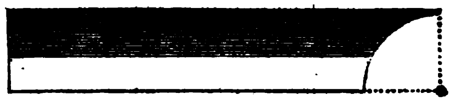
Cima Reversa, or Ogee.



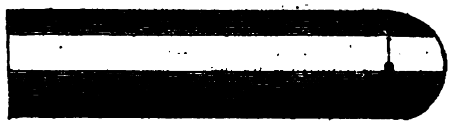
Cima Recta.



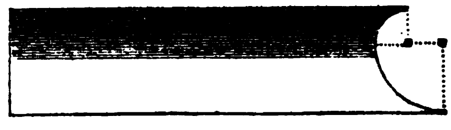
Cavetto, or Hollow.



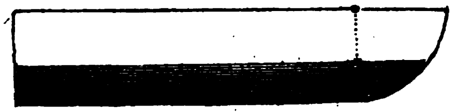
Ovolo, or Quarter Round.



Scotia.



Torus.



The forms of all mouldings are referred to a section at right angles to their longitudinal direction, when prismatic, or passing through the axis, if annular; and this is simply denominated the *section*, on account of its frequent use, as oblique sections only occur in mitres. The names of mouldings depend upon their form and situation.

If the section is a semicircle which projects from a vertical diameter, the moulding is called an Astragal, Bead, or Torus; if a torus and bead be both employed in the same order of architecture, they are only distinguished by the bead being the smallest. The tori are generally employed in bases and capitals.

If the moulding be convex, and its section be the quarter of a circle or less, and if the one extremity project beyond the other equal to its height, and the projecting side be more remote from the eye than the other, it is termed a Quarter-Round; this, in Roman architecture, is always employed above the level of the eye.

If the section of a moulding be concave, but in all other respects the same as the last, it is denominated a Cavetto. They are never employed in bases or capitals, but frequently in entablatures.

If the section of a moulding is partly concave and partly straight, and if the straight part be vertical and a tangent to the concave part, and if the concavity be equal or less than the quadrant of a circle, the moulding is denominated an Apophyge, Scape, Spring, or Conge: it is used in the Ionic and Corinthian orders for joining the bottom of the shaft to the base, as well as to connect the top of the fillet with the shaft under the astragal.

If the section be one part concave and the other convex, and so joined that they may have the same tangent, the moulding is named a Cymatium; but Vitruvius calls all crowning or upper members cymatiums, whether they resemble the one now described or not.

If the upper projecting part of the cymatium be a concave, it is called a Cima recta; they are generally the crowning membres of cornices, but are seldom found in other situations.

If the upper projecting part of the cymatium be convex, it is called a cima reversa, and is the smallest in any composition of mouldings, its office being to separate the larger members: it is seldom used as a crowning member of cornices, but is frequently employed with a small fillet over it, as the upper member of architraves, capitals, and imposts.

If the section of the moulding be the two sides of right angles, the one vertical, and the other of course horizontal, it is termed a *fillet, band,* or *corona.* A fillet is the smallest rectangular member in any composition of mouldings. Its altitude is generally equal to its projection; its purpose is to separate two principal members, and it is used in all situations under such circumstances. The corona is the principal member of a cornice. The beam or facia is a principal member in an architrave as to height, but its projection is not more than that of a fillet.

Tar from Pit Coal, a Cheap Substitute for Paint, for the Roofs of Houses. By F. H. [From the Farmers' Register.]

I applied to a painter in Richmond last summer to furnish me a bill of paints, &c. for a small building then erecting, who advised me to use what he called coal pit tar, for the roof, instead of paint. I have followed his advice, and am very much pleased with the result. The color produced from the tar is a beautiful glossy dark slate. Time only can determine whether it will be lasting; but I see no reason to doubt it. The tar is obtained from the pit coal in its process of distillation for the production of gas. It cost me in Richmond $5 50 per barrel of 33 gallons. In Baltimore, where it is manufactured, the cost would probably be much less. F. H.

Frederickshall, Louisa,
Sept. 20, 1833.

METHOD OF PRESSING OIL IN CORFU.—The manufacture of oil is the principal, and the machines employed in it are the rudest possible. The olives are pressed under a perpendicular stone wheel, which revolves in a large sized horizontal stone of a circular form, somewhat hollowed in the centre. A horse or mule sets the machinery in motion, and a peasant runs before and shovels the olives under the approaching wheel, the action of which is necessarily confined to a limited space, while its power is very insignificant. The bruised mass is then transferred to a bag made of rushes or mat, which is subjected to a heavy pressure; this pressure is increased by means of a screw, wrought by two men at irregular intervals; for the labor is so violent that they cannot possibly continue long at it. They ship two strong bars after the manner of a capstan, and then, with a most savage yell, they urge them forward by a simultaneous dart, the effect of which is marked by a quantity of oil oozing through the mat, and falling into a hole cut in the ground for its reception. After an interval of forty or fifty seconds, the laborers dart forward again with similar violence, and with a bodily effort which must strain their whole frame. The quantity of oil that two expert laborers can express in a day is estimated at ten or twelve jars of rather more than four gallons each.—[Hennen's Medical Topography of the Mediterranean.]

Precautions against Fire—Improvements suggested. By WILLIAM REED. [From the London Mechanics' Magazine.]

SIR,—I would beg to impress on architects and builders of new houses, the propriety of introducing stone staircases. The difference in cost would not be much in the long run, perhaps nothing at all, while the additional security to life and property would be immense. In all large houses with two staircases, the back stairs ought at all events to be of stone; but even in the third or fourth rate class of houses I do not see why stone should not be employed. Supposing a ground floor to be 12 feet in height, that will require a stair of 20 steps, of about three feet in width, which will only take up a space of 6 feet by 12; and, for the sake of commodiousness, there may be a landing at the tenth step, half way up, all as shown in the following rough sketches, of which fig. 1 is a side elevation, fig. 2 an end view, and fig. 3 a plan.

Fig. 1.

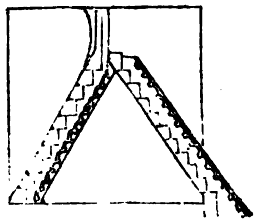


Fig. 2.

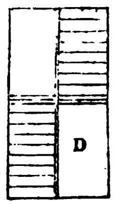
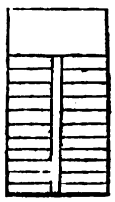


Fig. 3.



The width of three feet will, I conclude, be quite sufficient for the removal of such articles of furniture as are in common use among the inmates of such houses. By building the stair in two divisions, those hateful triangular steps, called winders, which have caused many a serious fall, would be got rid of. D will be the thoroughfare or door. The stone stairs may have bars of iron under them for their better support, as I have seen here in many instances. They should, of course, have wrought iron balustrades.

Another suggestion I have to offer relates to fire plugs. When it is dark or the streets are muddy, or a crowd has collected on the spot before the engines arrive, there is generally a good deal of difficulty in finding the plugs, and much time lost in consequence. I would therefore propose that, exactly opposite to every fire plug, there should be a lamp, with a glass of pink color, so that the driver of a fire engine might drive up to the very spot without the delay of a single instant. The cost of such a lamp would be so trifling that I dare say that the fire companies would themselves defray it.

Your obedient servant,
William Reed.

Peterhoff, Jan. 10, 1833.

On the Power of the Wind. By G. K. O.
[For the Mechanics' Magazine.]

Sir,—The wind is a natural agent, of much power, not often at rest, and accessible to any one, but is not applied to many mechanical purposes, by reason of its extreme irregularity. It is the design of this article to suggest a method of obviating this difficulty. Let a wind-mill cause an air-tight forcing-pump to condense air in a suitable vessel: for instance, a steam boiler. If a cylindrical vessel, ten feet in length and five in diameter, be thus made to sustain a pressure of 75 pounds on the inch, it will furnish 100 cubic inches per second of air of twice its ordinary density, for one hour, and exert force sufficient to raise 1000 pounds 450 feet, and, though unsupplied by the forcing-pump, at the end of the hour sustain a pressure of 30 pounds on an inch. The air may be applied directly to a wheel, or used as steam to work an engine. The quantity emitted would of course be regulated by a governor, and a fly-wheel may be employed for further uniformity.

The same object may be attained by causing the wind, whenever it may blow, to raise water into a reservoir, whence it may be drawn at pleasure to work a wheel or hydraulic engine. One thousand cubic feet of water raised 25 feet, would, in descending, exert force sufficient to raise 1000 pounds 1,562 5-10 feet high.

Two heavy weights may also be employed: 27 cubic feet of iron, specific gravity 7 5-10, descending 25 feet, exert force sufficient to raise 1000 pounds 316 4-10 feet. By means of double gearing one weight may be raised by the wind while the other is working, and when no work is doing, both may be raised. Whatever advantages may attend these means of regulating the force of wind are obvious. Yours, &c.

G. K. O.

On the Proximate Causes of Winds and Storms.—The four following propositions may be regarded as statements of general facts, which have been sufficiently established by numerous observations in various parts of the world.

1st. That part of the great ocean which lies between the thirtieth parallel of latitude on both sides of the equator is constantly swept by a wind varying but a few points from the east.

2d. Between the latitudes of 30 and 60 degrees in both the northern hemispheres, westerly winds predominate over those from the east quarter, in a ratio probably somewhat greater than that of three to two.

3d. There is in all latitudes (a few trades of limited extent where local causes have a decided effect excepted) a predominance of winds blowing from the poles towards the equator, over those moving in the opposite direction, but this predominance is not so well marked and decided as that of the westerly over the easterly winds, between the latitudes of 30 and 60 degrees.

4th. During the warm weather within the temperate, and at all seasons within the limits of the torrid zone, the fall of rain is often accompanied by lightning, thunder, and violent winds, constituting what is commonly called a thunder-storm. Thunder-storms generally commence between mid-day and sun-set, and move from west to east.—[Prof. Mitchell.]

Steam Carriages Abroad.—We learn, from a correspondent at Brussels, that King Leopold is taking a very active part in the introduction of steam carriages into Belgium, which, being generally a flat country, is extremely well suited to vehicles of this description. His Majesty has appointed a commission, consisting of Count Hompesch (president), Count Vilain XIV., M. Eagleo, banker, Colonel Schenofsky, and M. Jobard, manufacturer, to watch over the progress of this improved mode of transport, and to facilitate its general adoption by every possible means. The chief Belgian competitors in this line, at present, are M. Deitz, senior, (the inventor, we believe, of the steam-engine lately described in this Journal,) and a M. Couchans, of Charleroi, both of whom have been making experimental trials, with carriages of their own construction, in the neighborhood of Brussels. The carriage of Deitz seems, from the description sent to us, to be rather a stupendous affair—eight tons weight, and fourteen feet high! It is hung, however, on springs—enormous steel springs (*sur d'enermes ressorts d'acier.*) The boiler is composed of six elliptical chambers, placed in pairs one above the other, which contain altogether 240 square feet of heating surface. There are two pistons, which turn two cranks, which turn two pullies, which carry two endless chains, which turn the two hind wheels, by which (alone) the carriage is propelled. There is but one wheel in front, and that is used as a guide wheel. The engine is stated to be able, in ascending hills, to exert a power of 120 horses, and there appears to be some arrangement by which in such cases the wheels may have the help of cogs (*sont garnies de billets de bois de bout.*) The river steam-carriage of M. Couchans has four wheels. The circumference of the wheels is stated to be "elastic," which means, we presume, that they are constructed on the give and take principle of our Messrs. Jones and Company's patent wheels. The results of experiments hitherto made with these carriages are but indifferent. The greatest speed realized is likened to the "*galop d'un bon cheval.*" However, every new exhibition attracts "*une grande affluence de curieux,*" and is concluded "*au milieu des bravos de la foule;*" and at Brussels, as in London, no doubt is entertained, by the generality of people, that the day is close at hand when steam carriages will be the only vehicle in vogue on common roads.—[Mechanics' Magazine.]

AGRICULTURE, &c.

[*From the New-York Farmer.*]

Bone Dust as Manure for Turnips.—Although the quantity of bone dust usually applied to an acre is two quarters, yet one quarter will suffice if mixed with one or two quarters of riddled coal ashes. The bones should be carefully and equally mixed throughout the mass, which will be best effected by frequent turnings with the shovel. To expedite the drying of the ashes, strew a little hot lime, while turning the mass. The compost is sown with the usual machine. Turnips raised with this compost of bone dust and ashes, in the quantity alluded to. have been sold for £7 per acre, to be eaten off with sheep. They possess the same characters of a close crop, firm root, and hardiness to resist the rigor of winter, as turnips raised with bone dust alone evince. Perhaps peat, or vegetable ashes of any kind, would be equally as beneficial to mix with bone dust as those of coal.—[Jour. of Agricul.]

Saxony Wool.—To the late King of Saxony, when Elector, is due the merit of having first brought the breed of Spanish Merino sheep into Germany, which has since transferred the valuable trade in fine wool almost wholly from the Spanish to the German soil. From the period of its first introduction until 1814, when Europe once more began to enjoy the blessings of a general peace, this wool was gradually, although slowly, spreading itself over the surface of the kingdom of Saxony; but when the continental trade was thrown quite open, by the events of the short campaign of 1815, and the minds of men were set at rest by the final catastrophe of Napoleon, the Saxon wool dealers began to open a regular trade in the article to England, and they soon discovered the real value of this new branch of German commerce. In the first year, viz.:

In 1814, there were imported into England only 3,593,146 pounds; in 1819, 4,557,933; in 1824, 15,432,657; in 1828, 23,110,882. This prodigious increase in the demand for German wool naturally excited the emulation of the States lying contiguous to Saxony; and the flock masters of that kingdom carried on, for a considerable period, a very prosperous trade in rams and ewes with the land owners of Silesia, Bohemia, Austria, and other parts, who were desirous of changing the nature of their flocks to this more profitable breed. All the superabundance of grain, which had no external vent to carry it off, was given to the sheep, in order to accelerate their approach to the maximum degree of fineness of which their wool was susceptible; thus actually creating a profitable consumption for their corn, through the eagerness exhibited in England to obtain a superior quality of wool.—[Quar. Journal.]

To destroy Woodlice.—Perhaps in cucumber or melon frames nothing is more destructive than woodlice. Confining a toad in the frame or pit is an effectual remedy for the evil, but many persons would think the cure as bad as the disease itself, for they would be unable to eat the produce, from the recollection that the toad might have touched them. One method pursued with success is to make in the soil, close round the edges of the frame, a kind of hollow basin about six inches wide, and to fill this up with short hay to about the thickness of two inches. This, in the course of the first night, will become a place of retreat for them, and at about nine or ten o'clock in the morning, having opened the frame, pour upon this hay, with a wide rose watering-pot, a considerable quantity of boiling water. Then remove the hay and dead woodlice, and place a fresh supply of dry hay. Repeat this operation for two or three days, and you will see no more woodlice. Another system is to sink a pan half full of water in the soil, its rim being level with the surface, then to throw in a few slices of ripe fruit, and place a slate or piece of pot over it, leaving only sufficient room for the entrance of the depredators. Examine this every morning, and destroy all such as are found therein. The pan may also be filled with hay and pieces of fruit, such as apricot, &c. being laid in, they will quickly entice these depredators, which on removing you may destroy. Another very effectual method, is to slice the tuberous roots of the Bryony (brionia dioica,) a well known plant, and very common in our hedges, and to put a few of these slices into a common feeder, covering them over with a little moss or short hay, and placing them in different parts of the beds. Take out the pans the next morning, and after having removed the moss and baits, cast the woodlice into boiling water.—[Hor. Reg.]

Rubus Roridus. *Dewy Bramble.*—This rare species is a native of Madagascar, and strikingly different from all the known species of simple leaved brambles, in its finely cut stipules and bracteæ, which are covered over with numerous little transparent green glands, giving all the parts that surround the petals an appearance of being sprinkled with green dew. Its flowers are white, and by no means showy. We presume it requires the green-house, and may be easily multiplied by layers.—[Bot. Reg.]

(Continued from page 757.)

Resolved, That the friends and patrons of this undertaking ought with confidence and unanimity to persevere in their endeavors to secure its accomplishment; that its merits in respect to the commonwealth entitle it to universal approbation and encouragement, and the present and prospective interests of both city and country call for its execution: that so far from being premature and visionary, the claims and recommendations of the work arise from and are commensurate with its extent and relations; and that in the opinion of this convention, the views and measures of the New York and Erie Rail Road Company, so far as they have been made known, are appropriate to their object, and worthy of the concurrence and support of the public authorities and of their fellow citizens.

The committee on the subject of a petition to the Legislature, reported the following, which was unanimously adopted:

To the Honorable the Legislature of the State of New York.

The convention of delegates from the city and county of New York, and the counties of Rockland, Orange, Sullivan, Delaware, Otsego, Broome, Tioga, Steuben, Cortland, Cattaraugus, and Chatauque, assembled on the 20th day of November, 1833, in the city of New York, hereby respectfully represent:

That the inhabitants of the counties above named are deeply interested in the construction of a Railroad from the city of New York to Lake Erie, as proposed by the New York and Erie Railroad Company;

That the present and future interests, growth and prosperity of those counties essentially depend upon the opening of such an avenue of business and intercourse with the city of New York;

That the route prescribed presents no discouraging physical obstacles, and is not only practicable but for the most part unusually favorable for the graduation of a Railroad; and that the magnitude and importance of the measure, opening a direct and rapid communication between the Atlantic ocean and the great western Lakes lying wholly within our own jurisdiction, and at the same time strengthening our bonds of union with the distant portions of the republic, peculiarly entitle it to the favorable consideration of the State of New York;

This convention, therefore, being deeply sensible that such a thoroughfare only can furnish to the inhabitants of the southern counties of the State the facilities of access to market which their interests require, and afford to their enterprize and industry advantages corresponding with those which legislative aid has extended to other interior districts of the State, and relying on the favorable disposition of your honorable bodies to relieve this portion of the State and provide for the developement of its resources and the rapid increase of its population and wealth, thereby adding to the prosperity and strength of the Commonwealth, do earnestly and respectfully recommend this great object to your consideration, and in concurrence with the petition of the said Company, humbly petition the Legislature to encourage and foster the undertaking by such liberal subscription to the stock of the Company as the extent, prospects, and incalculable importance of the undertaking may deserve.

On motion, it was resolved, That the said petition be signed by the officers of the Convention, and duly forwarded to the Legislature.

The proceedings and resolutions of the meetings recently held in most of the southern counties were read, exhibiting the deep interest felt in these counties on the subject of the proposed railway, their sense of its incalculable importance to their present and future interests, their readiness to do the utmost in their power for its accomplishment, and their confident reliance on such aid from the Legislature as they believe to be due to that portion of the State, and indispensable to the success of the undertaking.

After an extended discussion respecting the importance and necessity of such a thoroughfare through the southern tier of counties; its relations to the interests of the commonwealth, and to the trade and intercourse of the Western States; the needful resources and means of its accomplishment; and the claims which it presents to the patronage of the Legislature, and the aid of the inhabitants and proprietors on the route, it was deemed expedient that an address on the subject should be made by the Convention to the citizens of the State.

Whereupon, the following members were appointed to prepare such address, to be published with the proceedings of the Convention, viz: Messrs. Page, Johnson, Whitney, North, and Lord.

The following resolutions were unanimously adopted, viz:

Resolved, That the respectful acknowledgments of the Convention be tendered to the President of the Merchants' Exchange Company, and to the Board of the Stock Exchange, for the accommodation afforded to this meeting in the use of their room.

Resolved, That the thanks of the Convention be presented to the President and the Vice Presidents for their very acceptable services on the present occasion.

Resolved, That the proceedings of the Convention be signed by the officers, and that the same be published.

The Convention then adjourned.

Gideon Lee, *President.*
James Pumpelly,
Geo. D. Wickham, *Vice Pres'ts.*
Wm. W. McCay,
David Ruggles, *Secretaries.*

Address of the Convention of Delegates from the Southern Counties of the State, held in the city of New-York, Nov. 20, 1833, on the subject of a Railroad from the city through those counties to Lake Erie.

Fellow-Citizens:

The policy of opening avenues of internal communication is established and vindicated by the experience of this state. The Erie Canal has probably added a million of population and a hundred millions of value to this commonwealth. It has doubled our productions, and enhanced in a still greater degree our resources and strength. Its local and public benefits indeed exceed calculation, and are annually increasing.

In the policy of such works, this state exhibits the first great example in regard to the productiveness and complete success of her undertakings. Her position, in respect to the ocean and the lakes, affords the most extraordinary advantages for the extension of such works to every part of her territory. Is her progress in this career to be suspended? With such unparalleled experience of benefits, and such ample accessions of strength and resources, is she to pause on the threshold of the advantages which her efforts have developed, and which, by her position and her means, are placed at her command? Are there no other sequestered districts requiring avenues of trade and business as urgently as those which have been penetrated: no routes offering the like benefits, and deserving equally the liberal patronage of the state? These are questions for the people to consider. They involve vast and permanent interests. An inspection of the map will show large districts of the state which continue unproductive and almost without population or value, for want of easy access to market. Of these the most extensive, most sequestered and necessitous region, is comprised in the southern tier of counties, which present a natural, direct, and feasible route from our commercial metropolis on the Atlantic, to the lakes and territories of the west, through a country capable of supporting a dense population, and of yielding an immense amount and variety of productions.

This route, though ineligible for canals, is highly favorable for a railroad. Such a road, by furnishing the necessary facilities of intercourse and business, would open the country on its borders to cultivation, and fill it with inhabitants; and be productive of benefits no less valuable than those which proceed from our works of artificial navigation. It would furnish the needful medium of direct and rapid intercourse, with the western states, through the winter as well as the summer months, and thereby secure to the city of New-York the growing commerce of the western waters, to which the Erie canal will soon be totally inadequate.

Shall not such an avenue be opened? Have we filled the measure of our hopes and wishes in respect to internal improvements? Shall the bare possession and discovery of our yet unoccupied natural advantages, satisfy us? Shall we supinely wait and see the commerce of the west turned off through other channels to the south, or drawn into the provinces of Canada? Will not the city of New-York deem the execution of this work essential to her interests, growth and prosperity? Is not the opening of such an avenue due to the southern counties? Is it not recommended, justified, and called for by every consideration which could be combined in such a work, viewed in its relations to the state?

The proper limits of an address will permit no more than a brief notice of the route, objects, and advantages of the proposed railroad.

The route as indicated by the formation of the country, and prescribed in the charter granted by the legislature for the execution of the work, extends from the city of New-York through the southern tier of counties to Lake Erie; the whole distance being about 400 miles. From a point on the lake, 60 or 80 miles south-westerly from Buffalo, the distance on this route to Hudson river, near the Jersey line, is greater only by a few miles than the distance on the line of the canal from Buffalo to Albany. In respect to its length, therefore, this route has the advantage of any more northerly one from the western interior to the city of New-York. It intersects the Hudson below the Highlands, where the navigation is seldom closed or obstructed by ice. From a point a few miles west from the Hudson, a valley through the Highlands affords an easy progress towards the Delaware. The course of the road from the Susquehanna river to the lake, will, on an average, be about 80 miles south from the Erie Canal. Its junction with the lake, whether at Dunkirk or Portland, will be extremely advantageous, those harbors being open and accessible whenever the westerly part of the lake is navigable.

With regard to climate, and other physical advantages, this route is peculiarly favorable for a railroad. It is unsuitable for canals, and as a great thoroughfare is secured by the formation of the country against competition.

Its relations to other and auxiliary channels of communication are numerous and important. Proceeding from the commercial capital of the Union, through so vast a region, which has at present no tolerable facilities of intercourse with the Atlantic, and terminating at the most desirable point of connection with the lakes, and the states and territories adjacent to them, it will constitute a grand avenue from the coast to the western interior and the valley of the Mississippi, with which railways and other communications will be connected at intervals throughout its whole extent. It crosses a wide range of territory in a direction generally at right angles with the numerous streams which abound in that part of the state, and with the fertile vales on their borders, thereby affording peculiar and abundant facilities for intersecting communications from every important locality, town, and district on either side.

The route crosses the Delaware and Hudson Canal, where coal from the mines connected with that work may be furnished for transport westwardly, and in the winter season to the city of New-York. It must pass the Delaware, Susquehanna, Genesee, Allegany, and several less important rivers, at points where those waters will extensively contribute to the use and value of the railway. Its connection with the Allegany, especially, will render it a very eligible medium of passage between the city of New-York and Pittsburg, Cincinnati, and the lower Ohio.

It will likewise intersect several very important artificial works which will be tributary to its success: as the Chenango canal about to be constructed from Binghampton to Utica; the railway, now nearly completed, which connects Owego with Ithaca and the Cayuga Lake; and the Chemung canal from Elmira to the head of Seneca Lake. By these avenues and by a contemplated communication from Fort Plain through Otsego county down the valley of the Susquehanna, a railway down the valley of the Unadilla, for which a charter has been granted, a canal which is in contemplation from the waters of the Allegany to those of the Genesee river, and by other proposed canals and railways from several points north of the route and from the adjoining counties of Pennsylvania, a vast amount of travel and transport from a great distance on both sides will be secured to this main line of communication.

To these sources of direct and auxiliary use and benefit, is to be added, in estimating the important relations of the work, its connection with the lakes, which cannot fail to secure to it an immense aggregate of business, not only from the navigation of those waters, but from the remote interior through the ordinary routes of intercourse by land, and railways, which will doubtless be extended westwardly from this, through the Ohio and Erie canal, the Indiana canal from the Maumee to the Wabash river, the projected railway from Chicago to the Illinois river, and other facilities of communication with the western waters, and thence with the State and city of New-York.

The geological and topographical character generally of the counties on this route is highly favorable to the construction of a railroad. There are no ranges of mountains, nor any formidable elevations, to be passed. The ascents are gradual, and scarcely exceed in any instance, it is believed, a rate per mile which is allowable on railroads without stationary power.

Information on this head, sufficiently full and accurate to remove all doubt as to the practicability and favorable character of the route, is derived from a survey through these counties under the authority of the Legislature in 1826, an examination of the entire route, and a survey of the eastern section of it, under an officer of the United States corps of engineers; and from the testimony of individuals acquainted with the most difficult localities. Large portions of the route are level and peculiarly feasible. Among these may be mentioned more particularly a section extending 150 to 200 miles from Binghampton westward, and indeed with little exception to the lake.

The extent of territory of which this road will be the outlet and avenue of communication with the city of New-York, deserves particular notice.

Considering the distance of the route from the Erie canal on one side, and from any practicable canal or railway in the same direction on the other, the territory of which it will command the travel and transport may be safely estimated at an average width of forty miles on each side the whole distance, excepting the first fifty miles from Hudson river. This estimate would give an area of 28000 square miles, or about 18,000,000 of acres. The population now on this area amounts probably to less than 1,000,000.

There are in the southern tier of counties in this state, west of the Hudson, about 7,000,000 acres of land, and a population now estimated at 300,000.

The construction of the railroad would, in the opinion of members of this convention, resident in those counties, cause this population to be more than doubled in five years, and would add more to its numbers within ten years than will be added in a century without such a thoroughfare.

The lands, which are now for the most part wild and unproductive, would be rapidly taken up for cultivation. They are generally of a character to invite the labor and enterprize of agriculturists, and these counties possess extraordinary advantages for manufactures. Their climate is peculiarly salubrious and healthful; and, with a railroad, their various products would at all seasons of the year be readily and cheaply conveyed to market. If they are not uniformly equal in richness of soil to some other counties in the state, this defect is compensated by the excellence of their climate, the number and character of their rivers and creeks affording innumerable positions for mills and manufactories, and their possession or contiguity to inexhaustible sources of iron and coal. With regard to the latter mineral, the regions watered by the Susquehanna will be abundantly and cheaply furnished from the anthracite formation near the southern border of the county of Broome, and, further west, ample supplies are attainable from the bituminous beds which are found from 8 to 40 miles south of the line of the state.

With an avenue to market, the immense forests of pine, and other descriptions of timber, with which they abound, will be rendered valuable, and constitute an important source of wealth to these counties.

With these advantages and resources, and with means of convenient and constant access to market, towns and villages would spring up on many localities now uninhabited; manufactures, trade, and every species of industry and business, would be introduced and established; and these counties would, at no distant period, become as populous, as prosperous, and as highly privileged in their moral, religious literary and social institutions and condition, as any other section of the State.

Fellow Citizens—The merits and claims of this undertaking are thus, though but briefly and imperfectly, presented to your notice. A charter has been granted by the legislature incorporating a company for the construction of the proposed Railroad; one million of the capital stock has been subscribed, and the company has been duly organized; but the extent and magnitude of the work require for it the voice of the community, the co-operation and aid of the citizens and of the State. As a public work, extending so great a distance through the interior, and having such relations to the navigable waters, and to the agriculture, trade, growth and prosperity of the State, it is deemed to have no ordinary claims on the patronage of the legislature and the public. As a work tending more immediately to benefit the Southern Counties, and to confer on them advantages corresponding in some measure with those conferred on the Northwesterly Counties, by the construction of the Erie Canal, it justifies an earnest and confident appeal to the Legislature for liberal and efficient aid. Those counties were, by the construction of the Canal, placed in a worse relative condition than they would have been had no such work been undertaken. The tide of emigration and settlement then in their favor, was, by the commencement of that work, turned away from them. Immense tracts of land, adjacent to the Canal, were opened to cultivation, with ample facilities of access to market; and the lands in these counties, which otherwise would have been taken up and comparatively filled with inhabitants, were neglected and rendered unsaleable, in which condition they remain, for the most part, at the present hour; no more than one-tenth of their surface, on an average, being cultivated. But for the Erie Canal, it is believed that these counties would, at the present time, have been more populous than those would have been which are traversed by that invaluable thoroughfare. While the commencement of that work was in question, and a general concurrence in its expediency was unattainable, the Southern Counties rendered it their timely and efficient support.—They cheerfully shared with the rest of the commonwealth in whatever of hazard and of liability was anticipated from that new and vast undertaking; and they were encouraged to rely, and do rely, on the aid of the State being extended to their relief. They appeal to the equity and justice of the commonwealth thro' her public authorities. They look to the counties which border on our navigable waters, and to the counties which owe their prosperity and their numbers to the liberal policy, enterprize, and common bounty of the State, and to other counties which need, and by a continuance of the same enlarged and beneficent policy, may share in the like advantages, for a candid estimate of their position and their wants, and for the aid which is essential to the success of the proposed undertaking.

Let it be considered that the proposed Railway can in nowise impair or interfere with the public utility, the local benefits, or the growing use and revenue of the Erie Canal. The routes are too far asunder to admit of interference and injury to each other by competition. The inhabitants on the line of the Canal will continue to possess and enjoy the peculiar and inestimable benefits of that work. It will continue to convey their products to market as regularly and as cheaply, and to serve all their purposes as perfectly, as it now does. The construction of the Railroad will abate nothing of their advantages. Its effect will be to create additional business; to augment the population, productions, and wealth of the State, as the Canal has done; to draw on to this route a vast amount of travel and transport, which is now directed through circuitous and expensive channels, to other points beyond our territory; and to double the trade and secure the growth of the city of New York.

An appeal to the citizens for their approbation and encouragement, and to the State for aid to the proposed work, is deemed especially appropriate at the present time, on account of the increasing productiveness of the existing public works of internal improvement, and the abundant means which they will soon supply for such works as may require assistance in other portions of the State. That it will continue to be the policy of the State to husband and apply those resources in such a manner, as to confer on every district as nearly as possible equal advantages, is too obvious to be questioned, if the people continue to understand and appreciate their own and the general interests. No such reduction therefore of the tolls on the canals of the State is to be anticipated, as to constitute any objection to granting the aid which is necessary to the proposed undertaking. One half of the annual surplus revenue of the Canals, after payment of the public debt, would, in a brief period, discharge the entire cost of this Rail Road; or replace such advances as its construction may require in addition to the funds subscribed by individuals. A subscription to the stock of two or three millions by the State would inspire such confidence, as to the accomplishment of the work, as to induce subscriptions by individuals for such further amount as might be necessary.

An ultimate reduction of the tolls on the Canals to a rate sufficient only to provide for their repairs and expenses can at no period be just or reasonable, while any objects of public utility and general welfare, not otherwise provided for, require the expenditure of public money. The extraordinary pretence that the tolls are a tax on those whose products are conveyed on the Canals, ought to arrest the attention and meet the disapprobation of the public. Is it so—that those, who, by their vicinity to these channels of cheap and easy communication, provided for them by the energy and responsibility of the whole State, can receive at their doors fifty per cent. more for their products, the tolls notwithstanding, than the inhabitants of the sequestered counties can realize for theirs, after deducting the heavy expense of time and money required for the transportation of them to market over circuitous and difficult routes,—is it so that those who under such circumstances pay tolls, deem this condition of their unparalleled advantages a hardship? Let it not be believed that there is a farmer or any citizen capable of reckoning his income, who would be guilty of such a perversion; or who would not gladly see the public arm extended to confer the like advantages on every section of the State.

It may well be questioned whether the increased business on the Canals the present season, is not owing to the extraordinary abundance of the crops, and prosperity of business, rather than in any considerable degree to the diminution of the rate of tolls which has already been made. It is stated on respectable authority that the expense to individuals who hire others to forward their commodities, is, with the reduced tolls, as great this season as it was on the like articles before the reduction took place. The effect of that measure therefore is to increase the income of the carriers, rather than to relieve or benefit the owners or producers of the commodities carried.

Whether this view of the subject, however, is well founded or not, no further reduction is called for with a view to induce a further increase of business on the Canals, especially on the Erie Canal, as that is already nearly if not fully occupied, and no possible advantage can be gained in respect to expense under the present rates of toll, by those who come on to it from the Lakes, should they take any other route to an Atlantic market.

There is, then, in respect to the ability of the State, the provision of means without hardship or injury to any portion of our citizens, and with respect to the equity, reasonableness and public policy of the measure, no obstacle to the extension of the necessary aid to the work now proposed; and it is therefore, with entire confidence, commended to the favorable consideration of the public.

On behalf of the Convention.

Sherman Page,
Noadiah Johnson,
Joshua Whitney, } *Committee.*
Theodore North,
Eleazar Lord

Rail Roads.—A Convention of Delegates from Kings, Queens, and Suffolk, will be held at the Inn of Thomas Halliock, in Smithtown, on the first Tuesday of December next, at 10 o'clock A. M., to concert and adopt measures in reference to a Railroad through Long Island. There is no region in this country where a Railroad can be made at less cost.

NEW-YORK AMERICAN.

NOVEMBER 23, 25, 26, 27, 28, 29—1833.

LITERARY NOTICES.

Abercrombie on the Intellectual Powers, &c. with Questions for the Examination of Students. New York: Harper & Brothers.—It is some months since the first edition of this valuable treatise was published by the Harpers as one of the series of the Family Library. The rapid sale of that edition, and the inquiry for the work in many seminaries of learning, has induced the publishers to issue a new edition, with questions carefully adapted to the examination of students, in whose hands the work may be placed. These questions are all thrown together at the end of the volume, and made to refer by figures to the pages where the topics inquired of, are treated; and, according to the system upon which they proceed—a bad one in our judgment, as only tending to exercise the memory, without developing the reasoning powers—they seem to us well and carefully framed.

The Influence of the Bible in Improving the Understanding and Moral Character, by John Matthews, D. D. Professor of the Theological Seminary at South Hanover, Indiana, with a preliminary essay by Albert Barnes. Philadelphia, Harrison Hall.—The object of this little treatise—which was originally published in numbers in a religious periodical—is to assert the claim of the Bible to be studied, not only as the faithful record of religion, but as a literary treasure, fitted by its style, its taste, its eloquence and its adaptation to all times, and to all states of human knowledge, to improve the judgment and purify the heart. In this point of view it must be admitted that the Bible is rarely considered, and yet it is, we think, well and successfully urged by the Rev. author, that as a *classic*, the Bible is only less valuable than as a book of Faith.

La Revue Francaise, No. 1: New York; Hoskins & Snowden.—We have here a well printed pamphlet, springing at once into existence, without any previous preliminary notice, and thus saving by a *me voici* all the trouble and circumlocution of previous annunciations, promises and explanations.—The design is to publish quarterly, similar numbers, to consist of choice extracts from French literature, and from the literature of other countries, translated into French. How far this can be well done by Editors to whom the French is an acquired language, may be problematical—so difficult do we deem it for any one to judge critically of the literature of a foreign tongue. It would, we think, strike us oddly to hear of an American Review, to contain extracts from, and notices of, American and English works, being projected by a Frenchman. Yet the case is analogous, and hence our doubts as to how this bold undertaking, and certainly well executed thus far, may succeed.

The contents of this number are diversified and full of interest. The first article furnishing extracts from Heyn's history of the year 1830 in France, is quite remarkable; and we shall, probably, take occasion to make some translations from it for our columns.

Greenbank's Periodical Library, Vol. III, No. I. Philadelphia: T. K. Greenbank & Co.—The last number of this very cheap and well printed periodical, now before us, commences Tytler's Life of Sir Walter Raleigh. This publication is issued weekly, in numbers of 48 pages, well printed on good paper, making in the course of the year, four large 8vo. volumes, each containing 620 pages! The subscription by numbers is $5 per annum, or $6 50 if received in volumes.

History of the Rebellion in Scotland in 1745 and 1746; by Robert Chambers, author of Traditions of Edinburg; 1 vol.; Philadelphia, *G. C. Miekle*.—There is no hero of romance whose fictitious adventures surpass in interest, or equal in dignity, the real ones of Charles Edward in the rebellion of forty-five. His whole course—from the moment he landed alone and almost pennyless on a wild and secluded shore of Scotland, to that in which, in order to allay the jealousies of "the Elector of Hanover," he was forcibly and faithlessly conveyed out of the dominions of France—was that of a chivalrous knight; who, staking life and honor in the game where a royal diadem was the prize, was ever foremost in the fight, the last in the retreat, whom hardships could not daunt nor fearful odds dishearten, and who, with the single exception perhaps of the battle of Falkirk, evinced throughout, equal skill as a commander, and courage as a soldier. In this delightful volume, Mr. Chambers dwells with the fondness of an antiquary, and possibly sometimes with the partiality of a Jacobite, on all the details of the brilliant, but ill-fated Highland irruption, which shook the house of Hanover on the throne, and startled all England with the marvellous feats in arms of wild mountain hordes, held together by no other bond, than a mixed feudal and family allegiance to the head of their respective clans. It is less a history, than a collection of personal memoirs, connected with this attemut of the Chevalier to recover the crown of his fathers; and though much of it has appeared before in various shapes, there are still many anecdotes now published for the first time, and as a whole, it is probably the best notice extant of *the forty-five*.

In order to enable our readers to judge of the general style of the book, we shall subjoin a few extracts.

The following comparison between the appearance and manner of reception at Holyrood House of George IV. during his progress in Scotland, and Charles Edward, lets us at once into the feelings of the author:

Charles approached Holyroodhouse by the same path over which George the Fourth, seventy-seven years after, was drawn thither, in his daily progresses from Dalkeith. As he was parading along, the Duke of Perth stopped him a little, while he described the limits and peculiar local characteristics of the King's Park. It was observed on this occasion by an eye witness, that during the whole five minutes his grace was expatiating, Charles kept his eye bent sideways upon Lord Elcho (who stood aside at a little distance), and seemed lost in a mental speculation about that youthful adherent.

As the procession—for such it might be termed—moved along the Duke's Walk, the crowd greeted the principal personage with two distinct huzzas, which he acknowledged by as many bows and smiles. Charles did not seem to court these acclamations, or even to appreciate them in the way that might have been expected from a person under his peculiar circumstances, but, maintaing all the dignified bearing and lofty indifference of a real prince, took the whole as a mere matter of course. The general feeling of the crowd seemed to be a very joyful one, arising in some cases from the influence of political prepossessions, in many others from gratified curiosity, and perhaps in still more from the satisfaction with which they had observed the fate of the city so easily decided that morning. Many had previously conceived Charles to be only the leader of a band of predatory barbarians, at open warfare with property, and prepared to commit any species of cruelty for the accomplishment of his purposes. They now regarded him in the interesting light of an injured prince, seeking, at the risk of life, one single noble object, which did not very obviously concern their personal interests. All, more or less, resigned themselves to the charm with which the presence of royalty is invariably attended. The present generation of the people of Edinburgh saw a king, *de facto*, pass over the ground which Charles was now passing over; a king who had no rival to his title, and whom the whole undivided country had agreed to honor and applaud. Yet, we doubt if the circumstances of that memorable scene, with all their exciting interest, composed nearly so fine an affair as the advent of the unfortunate Charles, equivocal as was his title, and miserable his retinue. In the case of George the Fourth, it is true, the whole population of Scotland was there to say, "God bless him!" and every body beheld, with wonder and affection, a monarch acknowledgedly the most powerful on the face of the earth. But, besides that his age prevented him from having the strictly personal charm of Charles, he was invested with none of that charm of national association which gilded the name of Stuart. He was a goodly object, and surrounded with goodly objects, to fill and please the living eye; but he excited no image of pleasure upon the mental optics that were backward cast upon the past. He was the sovereign of the understanding and the reason; but Charles was emperor over the imagination and the heart. Youthful and handsome; gallant and daring; the leader of a brave and hardy band; the commander and object of an enterprise singular beyond all former singularity, and hazardous beyond all former hazard; the idol of a sentiment equivalent to all that was generous; unfortunate in his birth and prospects, but making one grand effort to retrieve the sorrows of his fate; the descendant of those time honored persons by whose sides the ancestors of all who saw him had fought at Bannockburn and Flodden; the representative of a family peculiarly Scottish, but which seemed to have been deprived of its birth-right by the machinations of the hated English; Charles was a being calculated to excite the most fervent and extravagant emotions amongst the people who surrounded him. If the modern sovereign was beheld with veneration and respect as the chief magistrate of the nation, and with love and admiration as an acknowledged pattern of all manly politeness, the last of the Stuarts was worshipped by the devoted loyalists of that time, as a cherished idol. George might be greeted, in his splendid chariot, with cheers and smiles; but the boot of Charles is said to have been dimmed, as he passed along, with kisses and with tears!

The Chevalier triumphing as a king, was resolved or perhaps overpersuaded, to exercise a peculiar attribute of sovereignty, that of touching for the king's evil. The ceremony and its result are thus given:

While Charles held court in Holyrood, he revived, in one instance at least, a courtly practice which had been for some time renounced by the sovereigns of England. This was—touching for the King's evil. It is well known that not only was the superstitious belief in the efficacy of the royal touch for this disease, prevalent among the people so late as the reign of Queen Anne, but the Book of Common Prayer actually contained an office to be performed on such occasions, which has only been omitted in recent editions of that venerable manual of devotion. Queen Anne was the last monarch who condescended to perform the ceremony; on which account, it used always to be said by the Jacobites, that the usurping family *dared* not do it, lest they should betray their want of the royal character. We have been informed by an ancient nonjurant still alive, that a gentleman of England having applied to King George the First, soon after his accession, to have his son touched, and being peevishly desired to go over to the Pretender, actually obeyed the command, and was so well pleased with the result of the experiment, that he became and continued ever after a firm believer in the *jus divinum*, and a staunch friend of the exiled family. Whether Charles believed in the supposed power of the royal touch, we cannot determine; but it is certain that he condescended to perform the ceremony at Holyrood-House, under the following circumstances:—

When at Perth, he had been petitioned by a poor woman to touch her daughter, a child of seven years, who had been dreadfully afflicted with the disease ever since her infancy. He excused himself by pleading want of time; but directed that the girl should be brought to him at Edinburgh; to which she was accordingly despatched, under the care of a stout sick-nurse; and a day was appointed when she should be introduced to his presence in the palace. When the child was brought in, he was found in the picture gallery, which served as his ordinary audience chamber; surrounded by all his principal officers and by many ladies. He caused a circle to be cleared, within which the child was admitted, together with her attendant, and a priest in his canonicals. The patient was then stripped naked, and placed upon her knees in the centre of the circle. The clergyman having pronounced an appropriate prayer—perhaps the office above mentioned—Charles approached the kneeling girl, and, with great apparent solemnity, touched the sores occasioned by the disease, pronouncing, at every different application, the words, "I touch, but God heal!" The ceremony was concluded by another prayer from the priest; and the patient, being again dressed, was carried round the circle, and presented with little sums of money! Precisely twenty-one days from the date of her being submitted to Charles's touch, the ulcers fortunately closed and healed; and nothing remained to show that she had ever been afflicted, except the scars or marks left upon the skin! We have derived this strange tale from a non-juring gentleman, who heard the woman herself relate it, and who had touched with his own fingers the spots upon her body which had previously been honored by contact with those of Charles.

We conclude with a summary view of some of the atrocities perpetrated after the battle of Culloden, and for which the memory of the Duke of Cumberland will be justly execrated to the latest time:

The barbarities which followed the victory of Culloden, when the fervour of battle must have been cooled, and the victors completely assured of receiving no farther annoyance from the enemy, were such as to be scarcely credible by the present age; and the writer who now undertakes to display them in their real colors, may perhaps incur the charge of exaggeration or prejudice. Neither this imputation, however, nor any sentiment of delicacy shall be allowed here to stifle the statements which so many former historians have, for these, or for worse reasons, withheld.

The most obvious charge of barbarity which can be brought against the Duke of Cumberland, in reference to this period of the campaign, is that he did not take the pains which are usually taken by victors in civilized warfare, of attending to the wounded of the enemy in common with those of his own army. Charles, who, notwithstanding all the attempts which have been made to show him up as a monster, cannot be denied to have used his victories with moderation and humanity, had all along treated the wounded of his prisoners with the most anxious and considerate kindness; even incumbering himself, at various periods of his campaign, in order to provide for their comfort. But with the Duke of Cumberland, whose opportunities for displaying humanity were so much better, the case was very different. Not only did he permit the bloody scene already described, where the wounded insurgents were indiscriminately massacred, but he actually took a personal interest in the completion of the dreadful work. Soon after the battle, he was riding over the field, accompanied by Colonel Wolfe, the future hero of Quebec, when he observed a wounded Highlander sit up on his elbow, and look at him with what appeared to his eyes defiance. "Wolfe," he cried, "shoot me that Highlander scoundrel, who thus dares to look on us with so insolent a stare."—"My commission," said the gentle and excellent Wolfe, "is at your royal highness's disposal; but I never can consent to become an executioner." The Highlander, in all probability, was soon despatched by some less scrupulous hand; but it was remarked that from that day, the recusant officer declined visibly in the favour and confidence of his commander.

It is a fact equally authentic with the preceding, that, on the day after the action, when it was discovered that some of the wounded had survived both the weapons of the enemy and the dreadful rains which fell in the interval, he sent out detachments from Inverness, to put these unfortunates out of pain. The savage executioners of his barbarous commands performed their duty with awful accuracy and deliberation; carrying all they could find to different pieces of rising ground throughout the field, where, having first ranged them in due order, they dispatched them by shot of musketry. On the following day (Friday) other parties were sent out to search the houses of the neighboring peasantry, in which, it was understood, many of the mutilated Highlanders had taken refuge. They found so great a number as almost to render the office revolting to its bearers; but, with the exception of a few who received mercy at the hands of the officers, all were conscientiously murdered. An unconcerned eye witness afterwards reported to the writer just quoted, that on this day he saw no fewer than seventy-two individuals "killed in cold blood!" Dreadful, however, as this scene must have been, it was surpassed in fiendish wickedness by a sort of supererogatory cruelty which was acted by the soldiers in the course of their other operations. At a little distance from the field of battle, there was a wretched hut, used for sheltering sheep in stormy weather, into which a considerable number of the wounded had crawled. The soldiery, on discovering them, actually proceeded to secure the door and set the house in flames; so that all within perished, including many persons who were merely engaged in attending the wounded. In the rubbish of this habitation, between thirty and forty scorched and smothered bodies were found by the country people, after the monsters had departed from the scene of their ravages.

But by far the most horrible instance of cruelty which occurred in the course of these unhappy times, was one which took place in the immediate vicinity of Culloden House. Nineteen wounded officers of the Highland army had been carried, immediately after the battle, from a wood in which they had found their first shelter, to the court-yard of that residence, where they remained two days in the open air, with with their wounds undressed, and only receiving such acts of kindness from the steward of the house, as that official chose to render at the risk of his own life. Upon the third day, when the search was made throughout the neighboring cottages, these miserable men were seized by the ruthless soldiers, tied with ropes, and tossed into a cart, and taken out to the side of a park wall, where, being ranged up in order, they were commanded to prepare for immediate death. Such as retained the use of their limbs, or whose spirits, formerly so daring, could not sustain them through this trying scene, fell upon their knees, and, with piteous cries and many invocations to heaven, implored mercy. But they petitioned in vain. Before they had been ranged up for the space of a single minute—before they could utter one brief prayer to heaven, the platoon, which stood at the distance of only two or three yards, received orders to fire. Almost every individual in the unhappy company fell prostrate upon the ground, and expired instantly. But, to make sure work, the men were ordered to club their muskets, and dash out the brains of all who seemed to show any symptoms of life. This order was obeyed *literally*. One individual survived—a gentleman of the clan Fraser. He had received a ball, but yet showed the appearance of life. The butt of a soldier's musket was accordingly applied to his head to despatch him; nevertheless, though his nose and cheek were dashed in, and one of his eyes dashed out, he did not expire. He lay for some time in a state of agony not to be described, when Lord Boyd, son of the Earl of Kilmarnock, happening to pass, perceived his body move, and ordered him to be conveyed to a secure place, when he recovered in the course of three months. The unfortuate man lived many years afterwards to tell the dreadful tale; and the writer already alluded to appears to have derived his information from this excellent source.

The Duke of Cumberland has been characterized by his friend Earl Waldegrave, as one whose judgment would have been equal to his parts, had it not been too much guided by his passions, which were often violent and ungovernable. The cruelties, however, which distinguished his Scottish campaign, rather argue the cool malignant fiend than the violent man of anger. His courage was that of the bull-dog; but he had not the generosity of that animal, to turn away from his victim when it could no longer oppose him. After fairly overthrowing his antagonist, his savage disposition demanded that he should throttle, and gore, and excruciate it, as a revenge for the trouble to which it had put him in the combat.

Scenes in our Parish, by a Country Parson's Daughter, 1 vol. New York: Harper & Brothers. They who will read these simple annals with a right spirit, will find in them both amusement and improvement. They are, we cannot doubt, real scenes, such as any parish in England may afford—portrayed with feeling, and beauty of sentiment as well as of expression, and all tending to inculcate as the sole reliance for happiness, or consolation, a belief in, and dependance on the truths and promises of the Bible.

The Book of my Lady, a Melange, by a *Bachelor Knight;* 1 vol.; *Philad.*, Key & Biddle.—Most of the rhapsodies of this prettily printed volume have appeared separately before, we believe, in annuals and other similar publications; and upon the whole, we think they might as well have been left in their scattered state, for together they are too overpowering. We may, however, very possibly be of the number of those of "Spitzbergen-like temperament," for whom the author expressly declares he does not write, and therefore unworthy to criticise, as we are certainly incapable of admiring, such soaring flights.

Canterbury Tales, first series, by Harriet and Sophia Lee; 2 vols. Philadelphia, Carey, Lea & Blanchard.—It is well to go back, amid the multiplicity of new works daily poured forth, now and then to those volumes that time and the judgment of men have tested: We are therefore well pleased to see this edition of tales well remembered in other days, and which have not, in their kind, been surpassed by any thing of later date.

Library of Select Novels, Vol. xxiii. and iv.—*Richelieu:* N. Y., Harper & Brothers.—This novel, heretofore noticed in this paper with commendation, is well entitled, in our judgment, to take its place as a standard work—as delineating both character and events with great power and fidelity.

Companion to the Christian Lyre; by Rev. Joshua Leavitt. New York: Jonathan Leavitt.—This is a republication, without the music, and with the addition of many new hymns, of the Christien Lyre, a book of devotional poetry, which appeared in 1831.

Lovell's Folly, a novel, by Caroline Lee Hentz, author of De Lara, Lemirah, &c. *Cincinnati*, Hubbard & Edmunds.—An American novel, printed in the city of the West, and very well printed too in good bold type—a lady, too, the author—what further shall we say? We had better, we believe, commit the work to the judgment of the country, without saying any thing. Under cover of the principle, which seems to be gaining ground, that what is American must not be, what is called, harshly dealt by—Lovell's Folly may gain favor, and we would not willingly intercept a ray thereof.

New Maps.—*State of New York—State of Ohio.* J. H. Colton & Co. N. Y. publishers.—These are two very well executed and well colored maps, drawn by D. H. Burr, and reduced to a size that renders them convenient for consulting, without excluding any material objects.

No. V.

Wheeling, Virginia, Oct. 29th.

I used to think our sea-board climate as capricious as it could well be; but the changing skies under which we have travelled for the last three days convince me that no where is the office of weather-cock less of a sinecure than in the region through which I have just travelled. Yet I do not complain of the weather. Far from it—I consider myself peculiarly fortunate in having, during a three days ride over the Alleghanies, seen that fine mountain district under every vicissitude of climate; and though the cold has at times been severe—the harsh rains anything but agreeable for the time—the Indian summer heat almost sultry—and lastly the *snow* most unseasonable, I could not, if I had made my own private arrangements with the clerk of the weather, have fixed it upon the whole more to my satisfaction. The still cold frosty mornings gave a vigour and boldness of outline to the mountain scenery, that extended its limits and heightened its effect. The rains which an hour afterward washed the changing leaves, brightened their tints for the noon-day sun which followed, and the warm mist of evening imbued the landscape with a Claude-like mellowness that suited the rich repose of evening among the hills.

As for the snow, nothing could be more beautiful than the effect of it at this season in the woods. We had two flurries, on successive days, each of which after covering the ground about an inch in depth, was succeeded by a bright glowing sky. The appearance the woods then presented, it would be almost impossible to describe to you. Call up in your mind the brilliant and animated effect produced by a January sun shining through a leafless grove, over the fresh white carpet that has been wound among the trees during the preceding night. How do the dead branches smile in the frosty sunbeams—how joyously does every thing sparkle in the refracted light! Now imagine the tinted leaves of autumn blushing over those rigid limbs, and reflecting warmth upon the dazzling mantle beneath them—green, gold, and purple—scarlet, saffron, and vermillion—the dolphin hues of our dying woods, glistening in the silver shower, and relieved against a surface of virgin whiteness. Let the scene lie if you choose among mountains clothed with forests as far as the eye can reach—their billowy forms now sweeping off in vast curves along the sky, and now broken by ravines, through which a dozen conflicting lights climb their shaggy sides,—or, not less striking, let it be a majestic river, whose fertile islands, rich alluvial bottoms, and wooded bluffs beyond, are thus dressed at once in autumn's pomp and winter's robe of pride; and you can hardly conceive a more beautiful combination. Such was the aspect under which I crossed the last summit of the Alleghanies yesterday—and such under which I viewed the Ohio this morning. The fine undulating country between the mountains and this place, especially after passing the stage town of Washington, on the borders of Pennsylvania, left me nothing to regret in the way of scenery after crossing the last ridge this side of Somerset. And yet nothing can be more exhilarating than a canter over those heights on a bracing October day. The sudden breaks and turns of the mountain road open new views upon you at every moment, and the clear pure atmosphere one breathes, with the motion of a spirited horse, would "create a soul beneath the ribs of death," and rejuvinate Methusaleh himself. One must once have been a dyspeptic to estimate to the full that feeling of tangible health. For my own part, however philosophers may preach up the sublimity of intellectual pleasures, or poets dilate upon the delights of etherealizing sentiment, I confess that I hold one good burst of pure animal spirits far above them all. On horseback, especially when life quickens in every vein, when there is life in the breeze that plays upon your cheek, and life in each bound of the noble creature beneath you, who that has felt his pulses gladden, and youth, glorious indomitable youth, swelling high above manhood's colder tide in his bosom—who would give the rush of spirits, the breathing poetry of that moment, for all the lays that lyrist ever sung—for all the joys philosophy e'er proved. This I know must appear a shocking doctrine to "the march of mind" people; but as they are presumed to go on foot, they are no authority on the subject. Apropos of pedestrians, though your true western man generally journeys on horseback, yet one meets numbers of the former on this side of the Alleghanies. They generally have a tow-cloth knapsack or light leathern valise, hung across their backs, and are often very decently dressed in a blue coat, gray trowsers, and round hat, and travel about forty miles a day. Those with whom I spoke I generally found to be Germans. The horsemen almost invariably wear a drab great coat, fur cap, and green cloth leggings, and in addition to a pair of well-filled saddle-bags, very often have strapped to their crupper a convenience the last you would expect to find in the wardrobe of a backwoodsman, viz. an umbrella. The females of every rank, in this mountainous country, ride in short dresses. They are generally wholly unattended, and sometimes in large parties of their own sex. The saddles and housings of their horses are very gay, and I have repeatedly seen a party of four or five buxom damsels, mounted on sorry looking beasts, whose rough hides, unconscious of a currycomb, contrasted oddly enough with saddles of purple velvet, reposing on scarlet saddle cloths worked with orange-coloured borders. I have examined the manufacture of these gorgeous trappings at the saddleries in some of the towns in passing. They much resemble those which are prepared in New-York for the South American market, and are of a much cheaper make, and far less durable, than those which a plainer taste would prefer. Still the effect of these gay colours, as you catch a glimpse of them afar off, fluttering through the woods, is by no means bad. They would show well in a picture, and be a great assistance to a painter in relieving the shadows of a sombre landscape.

But by far the greatest portion of travellers one meets with, not to mention the ordinary stage passengers, consists of teamsters and the emigrants. The former generally drive six horses before their enormous wagons—stout, heavy looking beasts, descended, it is said, from the famous draught horses of Normandy. They go about twenty miles a day. The leading horses are often ornamented with a number of bells suspended from a square raised framework over their collars; the same being originally adopted to warn these lumbering machines of each other's approach, and prevent their being brought up all standing, in the narrow parts of the road.

As for the emigrants, it would astonish you to witness how they get along. A covered one-horse wagon generally contains the whole worldly substance of a family consisting not unfrequently of a dozen members. The tolls are so high along this western turnpike, and horses are comparatively so cheap in the region whither the emigrant is bound, that he rarely provides more than one miserable Rosinante to transport his whole family to the far west. The energies of the poor animal are of course half the time unequal to the demand upon them, and you will, therefore, unless it be raining very hard, rarely see any one in the wagon, unless perhaps some child overtaken by sickness, or a mother nursing a young infant. The head of the family walks by the horse, cheering and encouraging him on his way. The good woman, when not engaged as hinted above, either trudges along with her husband, or, leading some weary little traveller by the hand far behind, endeavours to keep the rest of her charge from loitering by the way-side. The old house dog—if not chained beneath the wagon to prevent the half-starved brute from foraging too freely in a friendly country—brings up the rear. I made acquaintance with more than one of these faithful followers in passing, by throwing him a cracker as I rode by, and my canine friend, when we met at an inn occasionally afterward, was always sure to acknowledge the intimacy. Sometimes these invaluable companions give out on the road, and in their broken down condition are sold for a song by their masters. I saw several fine setters which I had reason to suspect came into the country in this way—and the owner of a superb brindle greyhound which I met among the mountains, told me that he had bought him from an English emigrant for a dollar. He used the animal with great success after deer, and had already been offered fifty dollars for his purchase.

The hardships of such a tour must form no bad preparatory school for the arduous life which the new settler has afterward to enter upon. Their horses, of course, frequently give out on the road; and, in companies so numerous, sickness must frequently overtake some of the members. Nor should I wonder at serious accidents often occurring with these crank conveyances among the precipices and ravines of the mountains. At one place I saw a horse but recently dead lying beneath a steep, along the top of which the road led, and a little further in advance, I picked up a pocket-book with some loose leaves floating near the edge of the precipice. My companion reminded me of the story of Cardenio in Don Quixote, with the dead mule and the rifled portmanteau lying a few yards apart, among the rocks of the Sierra Morena; and we almost expected to see the grotesque figure which so excited the noble emulation of the worthy knight, leaping from rock to rock in the same guise that the admirable pencil of Cervantes has assigned to him. The apparition did not show itself, however; and we left the pocket-book at the nearest inn, to be disposed of according to the claimants that might appear. These mountains, though occasionally thus cut up by precipitous glens, are still by no means rocky—as would appear from the fact of the inhabitants hunting deer on horseback, through woods which would be almost impervious to a pair of city-bred legs. The modus operandi is very simple. The hunters collect in a troop—drive the deer in a circle—and then shoot from the saddle. You may remember something of the same kind described in Waverley. The soil must in general be indifferent, according to what was told us by the keeper of a turnpike gate, who claimed to be the father of twenty-seven children! I asked this worthy *paterfamilias* if the country was healthy? "Healthy, sir!" he replied, "that it is—healthy and poor—ten people run away where one dies in it." The soil improves much after leaving the mountains; and we crossed some rich bottom lands when fording the Youghioghany and Monongahela rivers,—the former a branch of the latter, and both fine pebbly streams, navigable at certain seasons of the year.

About thirty miles from Wheeling we first struck the national road. It appears to have been originally constructed of large round stones, thrown without much arrangement on the surface of the soil, after the road was first graded. These are now being ploughed up, and a thin layer of broken stones is in many places spread over the renovated surface. I hope that Uncle Sam has not the conscience to call this Macadamizing. It yields like snow-drift to the heavy wheels which traverse it, and the very best parts of the road that I saw are not to be mentioned with a Long-Island turnpike. Two-thirds indeed of the section we traversed were worse than any artificial road I ever travelled, except perhaps the log causeways among the new settlements in northern New-York. The ruts are worn so broad and deep by heavy travel, that an army of pigmies might march into the bosom of the country, under the cover they would afford; and old Ixion himself could hardly trundle his wheel over such awful furrows. Perhaps I was the more struck with the appearance of this celebrated highway, from the fact of much of the road over the mountains having been in excellent condition. There is one feature, however, in this national work which is truly fine,—I allude to the massive stone bridges which form a part of it. They occur, as the road crosses a winding creek a dozen times within twice as many miles, continually. They consist either of one, two, or three arches; the centre arch being sprung a foot or two higher than those on either side. Their thick walls projecting above the road, their round stone buttresses, and carved key-stones, combine to give them an air of solidity and strength that is really Roman-like; and marks them as memorials of taste and power, which will tell for the country when the brick towns they bind together shall have crumbled in the dust.

These frequently recurring bridges, you can readily conceive, constitute a striking and happy feature in the landscape, as, while the road leads through a narrow valley for many miles, they appear at almost every turn spanning its deep bosom, and reflected with all their sombre beauty in the stream below.

The valley widens within a few miles of Wheeling, and the road strikes into the hill-side, whose crooked base it has long been following. It soon begins to be cut out of the solid rock, and the ascent is rapidly accelerated. Above, on the right, the trees impend from a lofty hill over your path, and far below you see the stream, so long your companion, gleaming through a small cultivated bottom, which shows like a garden to the eye. It is girded by steep hills, and seems, with its single mill and one or two farm-houses, to be shut out from all the world. You advance a pistol shot, and you look into the chimnies of Wheeling. The OHIO is beneath your feet. The town lies in so narrow a strip along the river, that, from the ridge on which you stand, you will hardly notice its crowded buildings; and that first view of the lovely river of the west is worth a journey of a thousand miles. The clear majestic tide, the fertile islands on its bosom, the bold and towering heights opposite, with the green esplanade of alluvion in front, and the forest-crowned headlands above and below, round which the river sweeps away, to bless and gladden the fruitful regions that drink its limpid waters,—these, with the recollections of deeds done upon its banks—the wild incidents and savage encounters of border story, so immediately contrasted with all the luxuries of civilization that now floats securely upon that peaceful current,—these make up a moral picture whose colours are laid in the heart, never to be effaced;—no man will ever forget his first view of the Ohio.

I descended with regret from the elevation which afforded this noble prospect, and plunging into the smoky town below, am now comfortably quartered in the best tavern in the place. I shall remain here only till a steamboat comes along, and will write to you next from Pittsburgh. H.

FOREIGN INTELLIGENCE.

The packet ship Roscoe, of the 24th ult., from Liverpool, brings us London papers of and to the 23d. They are of ususual interest. And first, of

CAPT. ROSS.—The item of intelligence by this arririval, however, which, we confess, touches us the most—and, if we may judge from the general gratulation with which every one we have seen receives it, will most touch our readers—is that of the safe return to England of this long-lost officer and all the companions save three of his original voyage. He, with his son, commander Ross, had reached London, after being received throughout their whole progress from the north of England, where they landed from the Orkneys, with acclamations, ringing of bells, and every sign of rejoicing. They had dined with the king, by whom they were most warmly welcomed, and from the heads of the admiralty, and in every other quarter had received the most gratifying reception. So incredulous was the public of the possibility of his having returned in safety, that when the news of it reached London, it was taken as a hoax, and although a meeting of the subscribers to Captain Back's expedition was convened in order to take measures immediately to recall that gallant and self-devoted individual, Mr. Perry the Governor of Hudson's Bay Company, in assenting to take the preliminary steps for expiditing such recall, yet spoke of the return of Capt. Ross as far from certain. Having appeared, however, in person, all doubts were at an end; and this very packet has, we dare say, brought out despatches, with orders from the Hudson Bay Company to transmit by express to Capt. Back, the gratifying intelligence of the safe return of those, of whom, amidst the discouragements and uncertainties of all others, he never despaired, and for the chance, desperate as it seemed to most, of rescuing whom, he willingly incurred the risk of much toil and suffering, and the imminent hazard of a lingering and protracted death. Truly enviable, indeed, will be his feelings, when he hears the safety of his friend, and finds, moreover, that after justly entitling himself to the whole merit o such a sacrifice as his attempt implies, he may be very honorably, and for the most sufficient reasons, exempted from the hardships and perils of further prosecuting it. There is a letter from Capt. Back in the London papers, dated 19th June, *from Norway house, Jack river*, where he was making preparations to insure a safe transport of his boats, crews, &c. to a wintering ground. An express, therefore, sent off now, will intercept him in his winter quarters.

FRANCE was agitated by the events in the Peninsula, and according to the Spectator,

"The French Government have determined to station an army of observation, fifty thousand strong, along the Pyrenees. It is destined to act only in the event of Bourmont and his fellow officers taking arms under Don Carlos; which, it is maintained, would justify French interference with the internal concerns of Spain. A story which has been circulated of a protest by Posso di Borgo against Louis Philip's recognition of Queen Isabella the Second, is scouted as absurd, by the Paris correspondent of the Times.

Louis Philip has gained some popularity among his subjects, by the promptitude with which he has taken part with the existing Spanish Government; but he is likely to lose it in other ways. In a spirit of servile compliance with the wishes of the Austrian Government, he has caused the arrest of a very old friend of European liberty, Buenarotti, Marquis de Canossa, the only surviving descendant of Michael Angelo. His advocate, M. Prati, has published a letter soliciting subscriptions in England in order to defray the charges of his defence. The banished patriots of Italy, it seems, are not safe from the prosecution of their Austrian tyrants even in Paris. The Times says, in reference to this subject—

"The offence of this illustrious sufferer is his devotion to the cause of liberty from early manhood, and his Italian birth. These Northern and Eastern despots will drive the world mad with their outrages; but this is not all. The French nation, who are in earnest both where their domestic liberties and their national independence are concerned, must see with pain the obliquities of their so-called Constitutional Monarch, and his wavering but wily policy, with hatred of tyranny on his lips, and prompt subserviency to its dictates in his actions. The Regent of Spain might take a lesson from the fate of Poland, and think a little before she yields herself implicitly to the councils of Louis Philip."

Holland and Belgium.—There appears to be some chance of a collision between the Dutch and Belgian troops. The fortress of Maestricht, garrisoned by the Dutch, cannot be approached except through a territory declared to be neutral and inviolable: and which the King of Holland has no right to march his troops through, until he has removed the obstructions which still impede the navigation of the Maese. But the term of service of a portion of the garrison has expired, and they have become mutinous and insist upon being relieved. The question is, whether the King of Holland will, under these circumstances, attempt to replace them with fresh troops. Should he determine to do so, the Belgians who have moved a considerable force in that direction, will oppose him; and the French also would have a right to interfere, as they are parties to the convention by which the territory in question is declared to be inviolable and strictly neutral. General St. Cyr, the Commander of the French army of the North, had arrived in Brussels in order to make arrangements with the Belgian Government relative to their future proceedings.

Spain.—The manifesto of the Queen, published some days ago by us, had dissatisfied the liberal party in Spain and throughout Europe, without conciliating the apostolical party at home. Don Carlos had entered Spain, and the provinces of Biscay and Navarre were in a state of insurrection. Madrid however remained tranquil. The army generally espoused the cause of the young Queen, and there seemed little reason to doubt, at the latest dates, that the Regent would, by her own strength and forces, be able to subject the whole kingdom to the rule of the Infanta. If not, however, Louis Philippe, through M. de Rayneval, had openly proffered his aid to maintain the rights of the young Queen. So at least we read the professions of that functionary, though the London Times takes the whole as a mere complimentary flourish. Our own conclusion from all the accounts however is, that the Regent would of herself put down opposition: Don Carlos, though in Spain, was concealed; the military commanders of provinces had all given in their adhesion to the new dynasty, and Bourmont and his Vendeans, who had left the Portuguese service, and were performing quarantine in Estremadura, had been ordered out of the kingdom.

The acknowledgment of the young Queen by Austria had been received, but with many reservations, some of which were very unsatisfactory.

The French had fully recognized the young sovereign, and we presume—though as our papers only reach back to the 18th, we see no evidence of it—England had done likewise. The latest dates from Madrid are of 14th October.

Portugal.—Every thing here was in *statu quo.* The dates are only to the 7th. Those by the Swedish brig, arrived here some days ago, were of the 12th. Great distress prevailed among the troops of Pedro both at Lisbon and Oporto. Bourment, De la Reche Jacquelin, and other officers had left the service of Miguel, owing to disagreements with the Portuguese officers as to the mode of conducting the campaign Bourmont's son, however, and others of his countrymen, remain. Gen. Macdonald was the commander of the Miguelites.

Turkey and Russia.—The treaty between these two Powers is at length published. We copy an abstract of its provisions, giving the supplementary article at length. That article, inasmuch as it stipulates, that upon the requisition of Russia, the Porte shall at any time close the Dardanelles to every foreign power, will not fail to be protested against by this country, as well as by France and England.

The knowledge of the treaty between Russia and the Porte has at last become public. The following is an abstract of it. It is dated the 8th of July; being, according to the Turkish chronology, the 24th day of the moon, and consists of the preamble, 6 articles, and a conclusion, signed by the Seraskier Achmet Pacha, on the part of the Porte; and Count Orloff and M. de Bouteniff on the part of Russia. By the first article it is declared that there shall be perpetual peace, friendship and alliance, between the contracting parties, as well by land as by sea, and that this alliance has for its object the reciprocal defence against all attacks, of whatever kind, they promising to arrange mutually all affairs which may compropromise the tranquillity, and to secure it respectively without any exemption, and for thts object to afford each other effective assistance and conjunctive aid. The second article confirms all the preceding treaties,—viz:, that of Adrianople, of the 2d of December, 1829; that signed at St. Petersqurg, on the 14th of April, 1830; and the convention relative to Greece, concluded at Constantinople on the 9th of July, 1732. The third article specifies, that in conformity to the principles laid down as the basis of the treaty, and on the consideration of this reciprocal defence, Russia betng desirous of maintaining the independence and complete preservation of the Ottoman empire, his Imperial Majesty engages to afford to the Porte all those auxillary forces, both of sea and land, which circumstances may oblige Turkey to require; and in case such emergency should rise, his Sublime Highness is to decide on the number of forces both by sea and land which he may desire.—The fourth article provides, that of the two Powers, that which demands such aid from the other shall have solely to provide provisions for those auxiliaries forces. The fifth articles allows that, although the two contracting Powers have the intention of acting upon this treaty for a long time, yet, if circumstance should arise to require any alteration of the provisions contained therein, the term of eight year is defined for the purpose, to commence from the step of the ratifications; but if circumstances should demand an intermediate revision, the parties agree to treat thereupon. The sixth article establishes that the ratifications are to take place at Constantinople within the term of two months, or before if possible. The conclusion states that this treaty of alliance, offensive and defensive, has been negociated and contracted by the said respective Plenipotentiaries, who have consequently exhibited thereunto their full powers, in virtue of which they signed and sealed the said document.

The following supplementary article is the most important of all, at least to foreign nations:—"Supplementary article. The Sublime Porte, in pursuance of the principles, will close, in case of need, the Straits of the Dardanelles, that is to say, it will not permit the entrance of any foreign vessel, even under any pretext whatsoever. The present separate article shall be regarded as if inserted word by word, and comprised in the said treaty of alliance offensive and defensive, and shall as such be equally maintained and observed."

SUMMARY.

The meteoric phenomena of the 13th instant, which Captain Dixey, of the Algonquin arrived at Philadelphia, saw 130 miles from the coast, were seen also as far south as Augusta, (Ga.) and as far West as Cincinnati and Columbus in Ohio. The appearances were the same, it would seem, everywhere, though the hours differed somewhat.

From the Buffalo Journal of Wednesday last (20th inst.) we copy the following paragraphs:

The Weather.—Winter has set in, and the earth is once more covered with her white robe. Saturday evening the snow commenced falling, and continued with brief intervals until Monday morning, when it measured a depth of 22 inches.

Buffalo Harbor.—On Monday we counted SIXTY-FOUR sail in our harbor, including NINE Steamboats, all heavily laden with merchandize for the 'far west.' So great was the rush of passengers to the Ohio, on her leaving the wharf in the morning, that they were obliged to force some ashore. Our wharves are all bustle, and crowded with freight.

For the West.—The wind, which since Monday, has blown from the south-west hauled this morning to the northward and westward. As this is a leading wind from port, the hint was not lost upon our navigators. At half past 9 o'clock this forenoon we counted *thirty-seven,* sail then in sight, and under way—outward-bound. Many others were busily unmooring in the harbor, and should the wind continue favorable, we may expect to see the harbor deserted ere sundown. Many goods are still here, and should our present stern winter permit, some, at least, of these vessels will yet take another freight. So great has been the press of goods, the whole season, that the usual supply of salt for the west could not be sent, and several thousand barrels now needed there, although ready, cannot be forwarded for want of vessels upon which to ship.

Montreal 19*th Nov.*—The town has now a decidedly wintry appearance; on Saturday night snow commenced falling, and remained on the ground all Sunday. All yesterday it continued to snow at intervals, and towards dusk the thermometer went down to 30—two degrees below the freezing point; hence there is little doubt of its continuance for a few days.

Burning of Monroe Court House.—On Monday morning of the 28th ult., at about 1 o'clock, the Court House at Centreville, Monroe County, was discovered to be in flames, and the building, together with almost all the public records of the county, was totally destroyed. There appears to be no doubt but it was the work of an incendiary. It was the first day of the session of the circuit court, and fortunately for parties, the trial docket was in possession of the Clerk, and many of the papers in pending suits were in the hands of the attorneys. The court was therefore opened in a neighboring building, and the business of the term was not materially impeded. Nothing had transpired when our informant left Monroe, tending to fix suspicion on the individual who committed the offence.—[Mobile Patriot, of Nov. 11.]

[*From New Orleans, Nov.* 9.]

We learn that the ship New Jersey (now at the Bar) was run into by the ship Florida, near the Hole in the Wall, and that both vessels received considerable damage. They had to put into Key West, and repair.

We understand that in consequence of the severe indisposition of his lady, the Hon. Daniel Webster will not leave Boston until about Thursday. The same cause has operated to prevent his making any preparations for an address to the members of the Franklin Institute of Philadelphia.

Baltimore 26th inst.—The three masted steam packet Virginia, Captain James Hart, left this port this morning on her first trip for Charleston. She had on board a number of passengers for the southern part of our country, and some on their way for New Orleans, via the Charleston and Augusta Railroad. The enterprize is a good one, and we have no doubt will be crowned with success.—[Patriot.]

The New York State Temperance Convention at Utica, closed its business on Friday evening last, at 9 P. M. after a session of three days; and nine meetings. "The circumstance (says the Albany Evening Journal), that more than 250 delegates assembled at this inclement season when the travelling is so bad, evinced a spirit most favorable to the cause. The whole proceedings, with the resolutions adopted and the debates thereon, will be published in a double number of the Temperance Recorder, to be issued immediately. The young men of Utica, and those attending the convention as delegates, had a meeting, and resolved to call a State Temperance Convention of Young Men, to assemble at Utica in May next.—The Mayor of Utica, Henry Seymour, pays Two Hundred and Fifty Dollars towards defraying the expenses of printing the proceedings."

American Publishers.—A controversy having been raised in some Philadelphia papers, respecting the sums alleged to have been paid by American booksellers to American authors, Messrs. Carey, Lea & Co., the principal booksellers of that city, and possibly the most extensive publishing house in the United States, have made the following exposition:

To the Editor of the Pennsylvania Inquirer:

Sir—Your correspondent R. calls in question the fact of $30,000 having ever been paid to authors within a year, by any bookselling house in this country. The writer of this has never seen the article to which your correspondent replies, but as the information was derived from him, he holds himself responsible for the correctness of the assertion that we have paid *more* than $30,000 to authors and editors within a year.

We have now before us a list of 50 original, 12 translated, and 17 edited works, published within five years, (of many of them several editions) for which the authors and editors have received from us $131,037. A little more time for examination would probably increase it to $135,000, or an average of $27,000 per annum, being rather less than was stated from memory. Our engagements at this moment require us to pay little less than $40,000 to authors, of which nearly $30,000 will be for two works.

We have never considered booksellers entitled to much credit for paying authors liberally, any more than we should be disposed to admit that they were entitled to censure for not paying all who think proper to write. The bookseller is only the channel through which the favors of the public are conveyed to the author. If the stream be copious he will be sure to have a full share. If there be no favor on the part of the public, the bookseller who would undertake to act in their stead would speedily be bankrupt. In these days of brisk competition, there is no author whose books will be read, who cannot be paid, and there is no such author who complains. There are, undoubtedly, at all times, men of talent who have reason to complain of the reception their works experience, but the fault lies with the public and not the bookseller, although the author is generally disposed to place upon his shoulders a large portion of the blame We have suggested to some of our authors that a very interesting book might be made of the "Calamities of Booksellers," to match D'Israeli's Calamities of Authors. Authors have at all times taken care to let the world know their troubles, so that only one side of the question is known. We are pursuaded that there are few booksellers in extensive business who could not contribute a chapter.

Carey, Lea & Co.

An officer of the United States Ship Peacock, gives the annexed account (in a letter dated Batavia, July 12th, 1833) of the introduction of the Captain and other officers of that vessel to the King of Siam. The Peacock anchored, about the middle of February last, at the head of the Gulf of Siam.

"On the 18th, Captain Geisinger, Mr. Roberts, and a number of officers, went up in large boats sent down for our acommodation by the Government. We stayed at Pecknam the first night, and were hospitably entertained by the Governor. He is an old man, with a good humored face. We were at first very much disgusted at the abject, cringing behaviour of all who approached him. He was seated on his divan, which somewhat resembled a large bedstead. The natives, on entering the room, would squat down like dogs, and crawl about, not daring to stand in the presence of a superior. Early in the morning, we took leave of our host, and proceeded up the river, which is generally about a quarter of a mile broad. The country is low, and covered with trees. We passed an extensive fortification. constructed after the European style, After dark we arrived in the midst of the city of Bankok, the capital of Siam, and took up our quarters in the house assigned for our accommodation. It is a large building, erected by the Government for a foreign factory. I remained in the city about three weeks. The situation is low. The most remarkable feature of Bankok is the floating houses, which are constructed on bamboo rafts on each side of the river, and perhaps contain the largest proportion of three or four thousand inhabitants.

"Soon after our arrival, our whole party were honored in being permitted to pay our respects to the Phraklang, the Prime Minister. Seats were provided for us, but all his officers, and a large crowd of people, were squatting before him, in the posture of dogs, or crawling about on all-fours. He is a corpulent man, and was, according to the custom of the country, almost naked, and seated on a raised platform, ornamented with carpets and cushions. To our bows he made a slight inclination of the head. After some conversation with Mr. Roberts, we took our leave. A few days before I left, we were admitted to an audience of the King. Boats were provided by the Phraklang, and we were paddled the distance of about half a mile: on landing, we mounted the horses prepared for us, and rode about half a mile in a round-about direction, to the interior of the walls around the palace. After waiting until our patience was nearly exhausted, we were conducted to the presence of his Siamese Majesty. On each side of the road we walked were drawn up a long line of soldiers, and a number of elephants, richly clothed. At length we were shown into a large room, and found ourselves looking down upon a thousand prostrate figures, on their knees, with their faces to the floor. According to previous arrangements, we made the required number of bows, &c. to his Majesty, and seated ourselves on a carpet in the place assigned us. The perfect silence which was observed, the prostrate attitude of the courtiers, and the appearance of the King on a throne opposite, were really most imposing, and produced in us a feeling of awe.—The room was very large, and highly decorated; the throne was elevated eight or ten feet, and most beautifully ornamented. The King is a large man; he did not wear any thing on his head, and his upper dress was a light and rich gauze. He asked some questions of Mr. Roberts about our country, government, &c. and said he was glad to see the Americans.—Our audience continued twenty minutes. After taking leave, we were shown the elephants, of which the King has a great number; among them several were white, which kind are sacred amoug the Siamese. Within the ground enclosed about the palace are several temples to their gods, whose images are distributed about in great profusion, and generally in a tailor's posture. A great quantity of gilding is used in the decorations of the sacred buildings, both within and without. In the limits of a letter it is impossible for me to include any thing like a description of all that we observed. The remainder of our time at Bankok was occupied in attending their plays, tumbling, &c. and we were sometimes much amused."

The land is full of pertents which we take not upon us to read or interpret. In addition to the accounts of hurricanes and falling stars heretofore published, we have in the annexed extract of a letter from the vicinity of Hudson in this State, the notice of another very unusual occurrence:

"Woodburn, near Hudson, Nov. 15.

"A singular occurrence took place on my farm some days ago, which has excited a good deal of speculation among all who have since visited the spot. A beautiful and well grown little wood which you remember on the left of the road as you approach the house, containing about an acre and a half, suddenly sunk down about thirty feet, most part of it perpendicularly; so that where not long since the roots of the trees were to all appearance firmly imbedded, the topmost branches now peep out. The wood is bounded by the creek, of which the sides and bottom are blue clay. The land near the bank, from some unexplained cause, seems to have given way all at once, and slid into the creek; which, by the mass thrown into it, is so filled up, that from its previous width of fifty feet, with an occasional depth of twenty, it is reduced to a little rill, which one might easily jump across. A strip of land adjoining the road of about thirty feet wide and of considerable length, has sunk straight down, so that where the surface was before level, there is now a perpendicular bank of thirty feet. The spectacle altogether is most curious, but, as you may imagine, presents no great improvement to the appearance of my farm."

Gosling, the blacking manufacturer, is likely to become a personage as important as his colleague the celebrated Hunt, M. P., of London. After driving about the city in a wagon, with a pair of fine bays, two servants in livery, and a trumpeter; after sundry conflicts in newspapers, and contest with rivals,—a suit was commenced against him in the Court of Common Pleas, for 51*l.* 5*s.* sterling, for goods obtained in London under the name of Abraham Israel; but Gosling fought the battle manfully, and proved that Gosling was his real name; and that all his little Goslings had waddled about under the same title; that he made blacking in Paris for Louis Phillippe and Gen. Lafayette; that he was no "maker of antiquities," as he was charged withal; that he was actually *near* Paris during the three glorious days; and that the suit was trumpeted up by some malicious rival. The jury being of the same opinion, returned a verdict in his favor, confirming to him forever the envied name of Gosling. We have some suspicion that the whole trial was one of Gesling's ingenious puffs—[Star.]

Education in Kentucky.—The attention of our fellow citizens in Kentucky is beginning to be roused on the subject of primary Education. Some statistics which we read in a late number of the Maysville Eagle, showed an alarming destitution of common schools in that State, and an alarming number of persons unable to read or write. A Convention was held on the subject at Lexington on the 7th instant, composed of more than 100 delegates from 19 counties. Addresses were made by Dr. Beecher, Rev. Mr. Bullard and Dr. Drake, all of Cincinnati, and Rev. Mr. Kirk of Albany. The Convention, after continuing in session two days, adjourned to meet at Frankfort on the 9th of January next, when it is hoped the entire State will be represented. On the day previous to the opening of the above Convention, a *Convention of Teachers* was held in the same city, and was addressed by Rev. Dr. Beecher and Professor Caldwell. Both are said to have acquitted themselves with great ability and effect.—[Journal of Commerce.]

General Order.—All Midshipmen, whethe passed or not, who have seen sea service, and are not on special duty or furlough, will, after their leaves of absence expire, consider it their duty in future, to repair to the Navy Yard near Norfolk, New York, or Boston, as may be most convenient, and there attend the navy school and perform such services as may be required of them, under the superintendence of the Commander of the Yard.

The Commander of each Yard will furnish those, who report under this order, suitable accommodations in the Receiving Ships or Vessels in ordinary, and suitable opportunities for professional instruction, and employment in conformity with the general regulations prescribed by this Department. As the present measure is intended to be highly beneficial to the Midshipmen, he will not, beyond the usual pay and rations, make any allowances for the execution of it.

Levi Woodbury.

Navy Department, 15*th Nov.* 1833.

Department of State,
Washington. 16*th November*, 1833.

The following important notice to Mariners has been sent to this Department, from the U. S. Consulate at London:

Navigation into Harwich Harbor.

Trinity House, London, 19*th Sept.* 1833.

Notice is hereby given, that this Corporation has caused a buoy, painted *black*, and marked on the head "*West Altar*," to be laid on the western elbow of the shoal named the Altar in the entrance to Harwich Harbor.

The buoy lies in 12 feet at low water spring tides, with the following marks and compass bearings, viz:

Harwich High Light House, its apparent width open northward of the Low Light House, bearing N. W. by N.

The first Martello Tower, eastward of Languard Fort, on with the extreme southern outworks of that garrison, bearing E. b. S 1.J S.

By order. J. Herbert, *Sec'y*

New Group of Islands.—A Sydney paper contains the following particulars respecting a group of Islands discovered by Captain Harwood, of the Hashmy, whaler, extracted from the log of that ship:—

"In coming down from Japan, fell in with a group of islands, not laid down in the charts, in latitude 5 deg. 45 min. north, and 152 deg. 35 min. east longitude,—about fifty miles N. W. of Young William's Islands; the tops of the trees on the Islands were visible a considerable distance at sea. I had the crew of the Hashmy on them refreshing, who were treated with great kindness by the natives. The islands are very thickly inhabited, with plenty of cocoa nuts, vegetables, and such refreshments as are necessary for crews coming from Japan with the scurvy. There is also an excellent harbor on the eastern part of Young William's Islands."

Fire.—The Iron Works known as *Mifflin Forge*, the property of T. Stevens, Esq. of Gettysburg, and Col. Paxton, of Millerstown, situated on Chambersburg and Gettysburg Turnpike, were destroyed by fire on the night of the 12th inst. The works were valuable, having been but recently erected. The loss of the proprietors is estimated at 5,000 dollars

Melancholy Disaster.—On the night of Wednesday last, the dwelling of Mr. William Irvine, near Degraff's wharf, at Esopus, Ulster county, with all its contents, was destroyed by fire; and what is most distressing, three of his children, between the ages of eight and twelve years, perished in the flames.

IMPORTANT STEAMBOAT CAUSE.—*Superior Court, before Judge Oakley.*—The Fulton Steamboat Company vs. Abraham Voorhis, James Jenkins, James Hill, and John Voorhis.

This cause which, had been tried more than a year since before Chief Justice Jones of this Court, and a new trial obtained, was again tried this week. The plaintiffs owned the steamboat Washington, which on the 14th May, 1831, was run foul of, and sunk in Long Island Sound, by the Chancellor Livingston, which was owned by the defendants. The suit was instituted for the recovery of the Washington, between 50,000 and $60,000, as also damages for the loss of the profits which it was alleged would have been received by the running of the Washington during the season. The accident occurred in the night, when the Choncellor Livingston, was coming towards, and the Washington going from New York, running at the rate of 10 knots an hour—and when they first hove in sight were about 11 miles apart. They were near Stratford Light House; the Washington keeping on her course was struck by the Chancellor Livingston which was partly laying too, and in a short time the former went down, having scarcely time to save her passengers. At the former trial, in which the usages of the navigation of the Sound were introduced and proved, and in which there was a conflict of opinions, the plaintiffs recovered damages to the amount of $30,000.—In the present case, which lasted three days, after a patient hearing the jury rendered a verdict for the defendants.

The arrival of the British ship Mary, Capt. Tucker, at Natchez, from Liverpool, is spoken of in the American Standard, as a matter of great rejoicing. This we believe, is the first arrival at that place, of a ship from Europe, and it is hailed as an event of vast importance. The paper mentioned above, remarks, that when the packet was six miles below, "the ships St. Louis and Newark displayed their flags—our citizens fired a national salute, which was answered by the Mary. The Old Saratoga again thundered forth her welcom, while the steamer Bonia brought her into port in fine style, where she dropped anchor and made fast to shore."

[*From the Baltimore Chronicle of Thursday.*]

Stage Accident.—An unfortunate accident happened on Tuesday evening last, about half past 7 o'clock, on the Washington road, between Mr. Butler's, near Elk Ridge Landing, and the bridge, by the sudden coming in contact of Stockton and Stokes' stage, hence for Washington, with Beltzhoover's & Co's. stage, from Washington. The latter had in it five passengers, all of whom were thrown out, by the stage being upset, which was stove to pieces, and two of them very dangerously hurt. Mr. Delano, of Pittsfield, (Mass.) continued out of his senses last evening, with his head much bruised; and a young lady, whose name we did not learn, equally injured about the head—the other three, though badly hurt, were less dangerously so than the others. We do not learn that any *uncommon* blame is ascribed to either of the drivers.

Launch.—A new copper-fastened ship of 398 tons, built for Mr. Levi Houghton, was launched from his yard on Saturday last. She is intended for the freighting business and is commanded by Capt. C. Owen.

Another.—On Monday last, from the yard of the Messrs. Sprague, a fine new copper-fastened ship of 462 tons. She is owned in Providence, and is called the St. Lawrence.

Another.—A fine new ship of 442 tons, called the Mount Zion, was launched from the yard of Messrs. Crookers yesterday. She is owned by them and others, and is to be commanded by Captain Samuel Swanton, Jr.—[Bath (Maine) Inquirer, of 15th.]

BOSTON AND WORCESTER RAILROAD.

Proposals will be received until the 2d December next, for the GRADING AND MASONRY of the Third Division of the Road from Southborough to Grafton.

Further information may be obtained at the Company's Rooms, Nos. 7 and 9 Joy's Building, Boston.

o16 3t NATHAN HALE, Superintendant.

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.

S1 R J M M & F

☞ THE ADDRESS OF J. P. KENNEDY, Esq. of Baltimore, delivered before the Members of the American Institute in this city, together with a full account of the FAIR, held at Masonic Hall, for 1833, and for which a copy-right has been secured, is just published in pamphlet form, at the office of the MECHANICS' MAGAZINE, No. 35 Wall street, where it may be had by the single number, dozen, or hundred. n16

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York,
January 29, 1833. F3 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other decription of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for layin out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part o the New-York and Harlæm Railroad, now in operation.

J25 tf

NOVELTY WORKS,

Near Dry Dock, New-York.

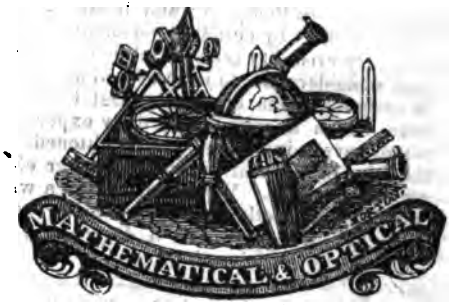
☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.



INSTRUMENTS

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 58 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyer's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD. U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Rail road Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

m18

Undulating Railway.—A series of experiments have been some time in progress, on a part of the Liverpool and Manchester railway, for the purpose of ascertaining the practicability of a scheme suggested and very strongly entertained by Mr. Badnall, of impelling carriages upon a railway by means of a power derived from the inequalities or undulations of the line. The directors of the railway liberally allowed Mr. Badnall the use of two engines, the Rocket and the Caledonian, and though the temporary defects of the former engine did not at first allow of the experiments being carried to the certainty that the projector desired, they were yet amply sufficient to justify his confidence in the principle. "I consider," says Mr. Badnall, "the results in practice to confirm most fully the advantages shown on the models, and I have not the slightest doubt that it will be found practicable to convey far greater loads from one summit of a curve to another, whose angles do not even exceed that of the Sutton inclined plane, than any locomotive engine can move upon a level road."

There appears to us to be something extremely feasible in this plan; and being one which can be tested by actual experiment, no extraordinary credulity is involved in giving a serious consideration to its practical applicability. It rests upon one of the simplest laws of nature, which is within the daily experience of almost every individual, but heightened, by the facilities of the railway into a greater efficiency of operation. We all know that a wheeled vehicle, or any other body, moving freely down a declivity, accumulates a degree of velocity within itself which will propel it a certain distance after it has ceased to be acted upon by the descent of the road. This momentum will be greater in proportion to the greater weight of the body, which is all in favor of the object to which Mr. Badnall purposes to apply it. In order to discover how far the impetus acquired in falling down one slope of an undulating railway would be available in impelling a train of carriages over the next, the experiment is very simple: a certain degree of velocity being given to a load at the foot of an ascent, sufficient to carry it to the summit, we have only to ascertain whether an equal degree of velocity could be given to the load by its own passage down a plane of the same inclination. For this purpose it is only necessary to allow the load to traverse the plane in a reverse direction, and ascertain the velocity with which it again passes the foot of the ascent. The experiments made upon the Sutton inclined plane have fully borne out the correctness of this test, and the result has been so clear and uniform as to leave no doubt as to the soundness of the principle.

Admitting the possibility that the use of steam may be ultimately superseded by this plan, the immense saving which would be accomplished in fuel, carriages, machinery, &c. fills an amazing space in the contemplation, and would be sufficient to counterbalance many attendant disadvantages. Among the principal of these would undoubtedly be the additional capital and labor required for the peculiar construction of such a line of railway, in which a level tract of country, so important a desideratum under the present method, would present one of the most formidable obstacles. We trust, however, that the subject will meet with that serious attention which it unquestionably merits, and in the mean time we publish, with Mr. Badnall's authority, the result of his experiments on Wednesday last.

The following engineers were present, viz. Mr. R. Stephenson, senior, the Messrs. Dixons, Mr. Daglish, and Mr. Badnall, who agreed that the truth and validity of the principle would be effectually determined by the following test:

As great a velocity as possible being attained by the engine *before* reaching a given point on the inclined plane, the *time* was to be accurately ascertained which the train occupied in ascending from that point to a state of rest. The power being then reversed, the time was to be accurately measured which the train occupied in descending from a state of rest to the point from which it had previously ascended. Hence it was obvious, that if the descent was made in less time than the ascent, the velocity generated at the foot of the plane would be proportionably greater than the velocity of the ascending train at the same point, and, consequently, the demonstration would be clear, that the engine and train would not only have ascended to an elevation equal to that from whence it fell, but to a greater one, the extent of which would be in proportion to the velocity attained.

Experiment 1. The Liver engine, and a load of 13 waggons, (weighing in all about 72½ tons,) after traversing a distance of three-fourths of a mile to acquire a sufficient velocity, ran up the inclined plane 278 yards; the time occupied in performing the latter distance being 90 seconds.

Exp. 2. The power being reserved, the engine and train *descended* 278 yards, the time occupied in the descent, viz. from a state of rest to the point from which the time of ascent had been calculated, being only 50 seconds.

Exp. 3. The engine and train having traversed three-fourths of a mile to generate a sufficient velocity, ascended 278 yards in 75 seconds.

Exp. 4. The power being reversed, the descent of 278 yards was accomplished in 40 seconds.

Exp. 5. The ascent of 278 yards was made in 80 seconds.

Exp. 6. The descent of 278 yards was made in 49 seconds.

AVERAGE.

	Total space passed over to generate the velocity.	Time occupied in ascending 278 yards.
Exp. 1,	1,320 yards.	90 seconds.
Exp. 3,	1,320 do.	75 do.
Exp. 5,	1,320 do.	80 do.
Total,	3,960 do.	245 do.
Average,	1,320 do.	81⅔ do.

	Total space passed over in generating velocity on inclined plane.	Time occupied in descending 278 yards.
Exp. 2,	278 yards.	50 seconds.
Exp. 4,	278 do.	40 do.
Exp. 6,	278 do.	49 do.
Total,	834	139
Average,	278	46 1-6

It is almost needless to add that these experiments have most fully confirmed the undulating principle, and proved, beyond all doubt, that a locomotive engine and load can traverse a curve or undulation whose two summits are of equal altitude with much greater rapidity, and, consequently, with far greater economy of *time* and *power*, than a level road of proportionate length.

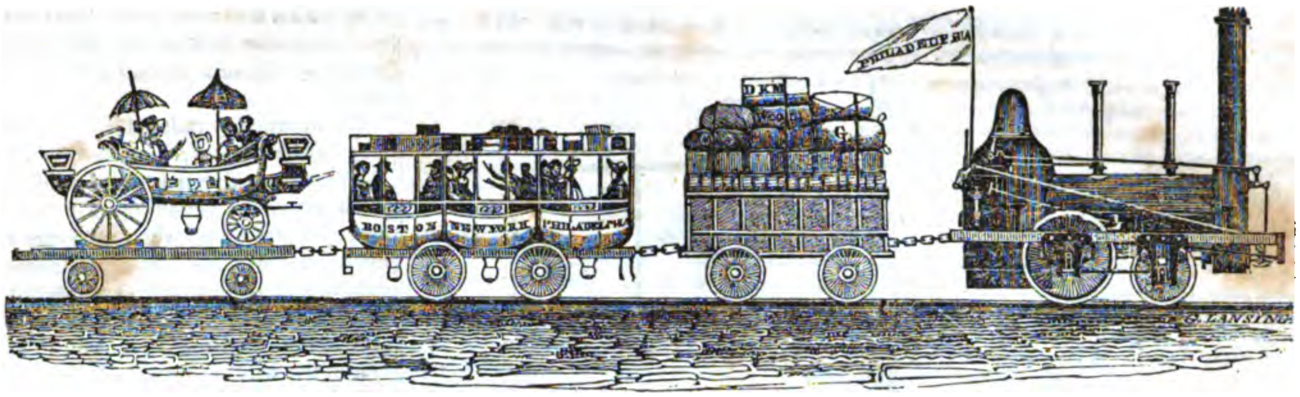
Mr. Badnall having intimated his opinion, that if a velocity of twenty miles an hour were attained at the foot of the plane by two engines, it would be proved by experiment that an engine could move from one summit of an undulation to another summit nearly, if not quite, *double* the load which that engine was capable of moving on a level, it was determined by the gentlemen present to decide this important question in the course of a few days.

We understand from a gentleman who has just passed over the Camden and Amboy Railroad, that by a very simple contrivance, adopted since the recent accident, the recurrence of a similar event need not be apprehended, as in case of breaking an axle, or even a wheel, the car will be sustained and the progress of the train be uninterrupted. We are happy to learn also, that the troublesome annoyance arising from the sparks and cinders is entirely removed on this road, as well as on the Newcastle road, although by a different contrivance.—[Philad. Gazette.]

☞ FOUR Numbers more will complete the second Volume of the Railroad Journal. It was stated in a previous number that *thus far* it had not paid its expenses—at the same time a suggestion was made to *Railroad Companies*, and to individuals who feel a deep interest in the success of *Internal Improvements*, and especially of the Railroad cause, that they would probably promote, not only their own, but also the public interest, by ordering a few copies of the Journal from its commencement, *bound*, in volumes or parts, as well as one or two additional subscriptions to the ensuing Volume, and thereby insure its continuance, and increase its usefulness. In reply to that suggestion, several liberal and highly complimentary communications have been received from gentlemen in different parts of the country, from which little doubt is entertained by the proprietor of the success of the measure which he adopted to insure its continuance, and increase its utility to the public. It is proper, however, for him now to state, that, in order to insure its success and prosperity, it will not be sent to any subscriber, after the close of the *present* volume, who shall *then* be in *arrear* for the work—until payment shall have been made for the past, and *in advance for the then current volume*. It is also proper for him to state, that, should it be continued in its present form, he will print, of the ensuing volume, a small number *only* in addition to what will be necessary to supply those who shall *commence with the year*—and that those extra copies will be designed *expressly* for those who may desire it from the *commencement* of the work.

It has been suggested to us by several friends of the Journal, that it would be more serviceable, because *better preserved*, if it were to be issued in *semi-monthly* or *monthly* parts, stitched in a cover, instead of weekly numbers, as heretofore. Of the importance of this suggestion scarcely a doubt can be entertained, as there would be fewer losses in the mails, and they would be much more easily preserved; yet many of its readers desire to learn more frequently than once a month what new improvements are being made, and therefore prefer its present arrangement. Others, again, have recommended an increase of price to *four*, instead of *three* dollars. To *this* suggestion we certainly should not object, if we thought our subscribers generally would cheerfully comply with it. In order, therefore, to ascertain their opinion upon both suggestions, and at the same time show the work in a *semi-monthly* form, with a cover, we shall issue the *two* last numbers of the present Volume together, with a Title Page and Index to the second or last half of the Volume, that they may then say how they prefer to receive it the ensuing year.

⁂ Necessity, and *necessity only*, will compel a discontinuance of many *exchange* papers, and the Proprietor trusts that those Editors who may not receive the Journal after the first number of the ensuing volume, will attribute its discontinuance to the true cause, viz, a want of patronage to meet its necessary expenses, and not to a want of inclination to reciprocate their favors. Should a different state of affairs result from his present exertions, he will be happy again to renew the acquaintance. He regrets also that he is entirely unable to comply with the oft-repeated "Please exchange," which meets his eye from every quarter of the Union. Nothing would afford him more pleasure than to exchange with all who may desire it—*except* such an increase of patronage as would afford him a handsome income over all expenses.



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, Editor.] SATURDAY, DECEMBER 7, 1833. [VOLUME II.—No. 49.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, DECEMBER 7, 1833.

We would call attention to the advertisement on the last page of this number of the Journal, of the *American Steam Carriage Company* of Philadelphia.

Baltimore and Ohio Railroad Report.—We are indebted to P. E. Thomas, Esq. President of the Company, for one copy, and to an unknown friend for a duplicate, of the *seventh* annual report of the proceedings of this company, a part of which will be found in this number of the Journal. It will be continued in our next, together with such of the accompanying documents as we may deem of general interest. We have also received a report of the committee of the Charleston Railroad Company, on Cars, which will be noticed in our next.

Paterson Railroad Opening.—We regret having been unable to accept of the polite invitation from the President of the Company to attend the opening to Bergen, on the 29th ult., of the *Paterson and Hudson Railroad*. We, however, copy from the New-York American an account of the event, and shall take the earliest opportunity of visiting it, and again refer to it more at length. We cannot, however, omit to call attention to the bridges, a description of one of which we take from the New-York American. It was built, we understand, by Mr. Thomas Hassard, of Baltimore, who has also built several others upon the same plan on the Baltimore and Susquehanna, the Boston and Providence, and the Boston and Worcester railroads. They are constructed upon the plan patented by Colonel Long, of the United States Army, a gentleman to whom this country is indebted for many important discoveries and inventions. We are promised a more particular description, with drawings of these bridges, which we shall take pleasure in laying before our readers ; and we most cheerfully recommend Mr. Hassard to tho notice of those who desire to construct works of a similar character.

"The bridge over the Hackensack, which is 1700 feet long, and which traverses the river diagonally, received and sustained the cars, travelling at a round trot, as solidly as the earth itself ; so well and securely is it braced in all its parts, and yet presenting to the eye a structure remarkable for lightness of appearance. The draw—the first level one we remember to have seen—is most ingeniously contrived. When the passage is to be opened, a moveable platform of equal length with the draw, and constituting part of the road, is made to slide aside, and the draw takes its place. The machinery for effecting this is so simple, that a single man can do the whole. The draw in the bridge over the Passaic is lifted in a single piece ; and as that is necessarily very heavy, being near thirty feet long, and of strong and well secured timbers, it would seem to require no trifling mechanical force to move it ; yet, by means of a weight duly calculated, connected with the chains by which the draw is raised, but suspended at such a distance form the fulcrum as to furnish, as the bridge rises, a counterbalancing force to its weight, the whole mass is raised by a single man turning an ordinary crank."

Railroad Meeting.—The Dayton Journal says "We were highly gratified at witnessing the interest manifested by our citizens on the subject of railroads, at the meeting on Wednesday evening. It equalled our wishes, and even surpassed our hopes. The books were opened for subscription, and before the meeting adjourned, 811 shares were subscribed for. A committee of gentlemen were then named, to call personally upon such citizens as had not subscribed at the meeting, and receive their subscriptions, and 405 additional shares have been taken. The stock subscriced in the county at the first opening of the books previous to the survey of the route, amounted to 217 shares ; so that the whole which has been taken in this county now amounts to 1432 shares, or $71,650."

Turnpike to Syracuse.—The road between this place and Syracuse, (says the Pulaski Banner of 23d November,) is a subject of general execration and complaint ; and we are exceedingly glad to be able to announce that measures are about to be taken for its improvement. There is nothing which gives a place so bad an odor abroad, as impassable roads—and we are bold to say, that on the round face of Mother Earth, there can be found no other wrinkle so deep and so disgusting as the time-honored wrinkle between Pulaski and Syracuse. Every one will rejoice, therefore, that her ladyship's face, in this matter, is about to be overhauled and improved.

At a general meeting held at Central Square, Oswego co. on Saturday, November 9th, 1833, to take into consideration the propriety of establishing a turnpike from Syracuse to the village of Pulaski, William Ford, Esq. was called to the chair, and Edward M. Fitch appointed secretary. On motion of H. Fitch, it was resolved, That a committee, to consist of N. I. Roosevelt and Miles Hotchkiss, Central Square ; John Leach, jun., Cicero ; Erasmus Stand, and Benj. F. Williams, Salina ; Elam Lynds and M. D. Burnet, Syracuse ; Avery Skinner, Union Square ; Hiram Hubbell, and L. D. Mansfield, Pulaski,—be appointed, whose duty it shall be to inquire into the practicability of constructing the above-mentioned road, and to take such measures as they may deem expedient to facilitate the object, and to make such report at the house of M. Hotchkiss, on Tuesday, the 3d of December, at one o'clock, P. M.

Resolved, That the secretary be authorized to apprise the above mentioned committee of their appointment.

Resolved, That said meeting adjourn to meet again at said place on Tuesday, December 3d, 1833.

Why a turnpike ? Why not a railroad at once ? As there *must* be a railroad within a few years, why not commence it at once ? It is better to appropriate every dollar towards such a work as will be of lasting utility, than to construct a turnpike *now*, and then a railroad hereafter. Nothing short of a railroad should satisfy.

Cotton in Florida.—By a statement in the last Floridian we perceive that a great increase in the production of cotton is taking place every year. From two ports in Middle Florida, St. Marks and Magnolia, in 1825, 64 bales cotton were shipped. In the year from the 1st of July 1832, to the 1st of July 1833, 9675 bales were shipped from the same ports. This fact speaks for itself.

Harper's Ferry, and in doing so, they believe that they have discharged one of the most important of the trusts committed to them.

(*To be continued.*)

[*From the New-York American of Nov.* 30.]

Opening of the New York and Paterson Railroad.—Yesterday, the route of this road, which is now complete from Paterson to the Bergen Ridge, was thrown open, and traversed by a large party invited by the directors of the company to witness the successful accomplishment thus far of their labors. Leaving Powles Hook about half past nine o'clock in stages, we were rapidly conveyed to the ridge, distant about two miles and a half, where cars drawn by horses were in waiting. In and on these—for they are construsted to carry outside as well as inside passengers—the party, reinforced by many gentlemen of New Jersey, who there joined them, proceeded leisurely, that is at the rate of about ten miles an hour, along the road. It passes for about five miles over the Newark salt marshes, above which it is raised upon an average four feet, until after passing Berry's creek, when it begins to ascend at the rate of thirty five feet per mile, until the embankment reaches a height of eighteen feet. Great obstacles have been overcome in constructing this road: first, the carrying such an immense quantity of earth; the uncertain bottom in many spots; the number of small creeks, in addition to two large rivers, to be passed; and therefore the necessity of bridging to a great extent, and in such way as both to preserve the requisite level and to obtain the firmness and solidity of structure essential to safety. In all these respects, the company appear to us to have fully succeeded. The bridge over the Hackensack, which is 1700 feet long, and which traverses the river diagonally, received and sustained the cars, travelling at a round trot, as solidly as the earth itself; so well and securely is it braced in all its parts, and yet presenting to the eye a structure remarkable for lightness of appearance. The draw—the first level one we remember to have seen—is most ingeniously contrived. When the passage is to be opened, a moveable platform of equal length with the draw, and constituting part of the road, is made to slide aside, and the draw takes its place. The machinery for effecting this is so simple, that a single man can do the whole. The draw in the bridge over the Passaic, is lifted in a single piece; and as that is necessarily very heavy, being near thirty feet long, and of strong and well secured timbers, it would seem to require no trifling mechanical force to move it; yet, by means of a weight duly calculated, connected with the chains by which the draw is raised, but suspended at such a distance from the fulcrum as to furnish, as the bridge rises, a counterbalancing force to its weight, the whole mass is raised by a single man turning an ordinary crank.

After stopping at, and examining, each of these bridges, the party proceeded to Paterson, where they spent some very agreeable hours. Having visited the falls, which happened to be even more picturesque than usual by reason of the high water in the river, they partook of a collation at the office of the Company.

After the entertainment—we borrow the language of the Journal of Commerce—Mr. Daniel Jackson of N. Y., gave the health of the President of the Paterson Rail Road, which drew from the President, the Hon. Ph. Dickerson, a succinct statement respecting the enterprze which had just been completed. He said that somewhat more time and money had been expended than it was at first supposed would be necessary. But the estimates were made when such works were more a novelty in our country than they are now, and he thought that those who were correctly informed, would now rather wonder that the road had been completed so soon, than that it had not been completed sooner. Some unexpected obstructions had been found in the ground, over which the road was to pass. The extent of the contracts, and the distant part of the world from which the various materials were to be brought together, necessarily required time. The rails were to be procured from Georgia, some other materials from the interior of the State of New York and Canada, the iron from Liverpool, the contractors from New England, the laborers from Ireland, and the money from the city of New York. On the whole, he thought there was reason for congratulation in reviewing the history of the enterprize. He concluded by giving "the City of New York, the heart of our Country." Mr. Charles King, at the request of the New York Gentlemen present, made a few remarks in reply, and gave, "Paterson, here nature and art conspire to give to industry an ample reward."

We have been politely furnished by Colonel Long, with the following tables and explanations, showing the performance of engines of different capacities, on different grades, at different velocities and with different loads, which we submit to our readers without having had leisure to examine, or even to read them. They will, however, lose none of their value on that account, as the source from whence they come will insure them attention.

Table I.—Performance of a four ton engine on different grades, at different speeds, and with different loads.

Statements.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
	speed	level	5 ft	10 ft	15 ft	20 ft	25 ft	30 ft	35 ft	40 ft	45 ft
	miles	tons.	tons	tons	tons	tons	tons	tons	tons	tons	tons
No. 1	slow	60	49 4	42	36 6	32 4	29	26 4	24	22 4	20 6
2	5	30	24 7	21	18 3	16 2	14 5	13 2	12	11 2	10 3
3	10	28	23	19 6	17 1	15 1	13 5	12 3	11 2	10 4	9 6
4	15	25	20 6	17 5	15 3	13 5	12 1	11	10	9 3	8 6
5	20	20	16 5	14	12 2	10 8	9 7	8 8	8	7 4	9 9

Table II.—Performance of a five ton engine on different grades, at different speeds, and with different loads.

Statements.	1.	2.	3.	4.	5.	6.	7.	8.	9	10.	11.
	speed	level.	5 ft	10 ft	15 ft	20 ft	25 ft	30 ft	35 ft	40 ft	45 f.
	miles	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
No 1	slow	76 8	63 2	54	46 8	41 6	37 2	28 8	31	27 6	26
2	5	38 4	31 6	27	23 4	20 8	18 6	16 9	15 5	13 8	13
3	10	35 8	29 5	25 2	21 9	19 4	17 4	15 8	14 4	12 9	12 2
4	15	32	26 4	22 5	19 6	17 3	15 5	14 1	12 9	11 9	10 7
5	20	25 6	21 1	18	15 6	13 8	12 4	11 3	10 3	9 5	8 5

Table III.—Performance of a six ton engine on different grades, at different speeds, and with different loads.

Statements.	1.	2.	3.	4	5.	6.	7	8.	9.	10.	11.
	speed	level.	5 ft	10 ft	15 ft	20 ft	25 ft	30 ft	35 ft	40 ft	45 ft
	miles	tons	tons	tons	tons	tons	tons	tons	tons	tons	tons
No. 1	slow	96	79 2	67 4	58 6	52	46 6	42 2	38 6	35 6	32 8
2	5	48	39 6	33 7	29 3	26	23 3	21 1	19 3	17 8	16 4
3	10	44 8	36 9	31 5	27 4	24 2	21 7	19 7	18	16 6	15 3
4	15	40	33	28 1	24 4	21 6	19 4	17 6	16 1	14 8	13 7
5	2,	32	26 4	22 5	19 6	17 3	15 5	14 1	12 9	11 9	11

Explanations of the Tables.

The computations exhibited in the foregoing tables, relate to the performance of engines of different weight, and to various other circumstances intimated in the titular heading of each table.

The vertical column, headed col. 1, exhibits the rate of speed in miles per hour for which the computations provide. The other columns headed col. 2, to col. 11, inclusive, exhibit the grade of the road, ascending, in feet per mile, together with the gross load expressed in tons and parts, that may be conveyed upward, at the various rates of speed presented in col. 1.

The statements are exhibited in series running from left to right, through all the columns of the tables, and are numbered from 1 to 5 on the left of each table. The different statements relate to the different rates of speed exhibited in col. 1, varying from a speed of 2 to 3 miles per hour, which is designated in the tables as "slow," to a speed of 20 miles per hour.

The steam pressure or elasticity contemplated in all the computations, is 30 pounds to the square inch; the effective force of which, in producing locomotion, at the lowest rates of speed, is estimated at 33 1.3 per cent. of that pressure.

The series of statements designated No. 1, in each of the tables, exhibits the effective performance as just mentioned, without regard to the condition of the road, with respect to the adhesion between the rails, and the wheels of the engine. This performance can only be expected when the road is in a condition to afford the requisite adhesion. With the steam power here contemplated, the wheels will be liable to slip on the rails, when the latter are covered with mud, frost, or snow; but in the best state of the road, such a performance may be effected.

The other statements exhibit the efficiency of the three classes of engines, which may safely be counted on, in all states of the road and weather, frost and snow excepted; it being always understood that the road must be well made, and free from abrupt curvatures.

An inspection of the tables will show the loads that may be drawn on a level road, at different rates of speed, as also, the loads that may be drawn upward on acclivities, and at different rates of speed, and by traversing either table diagonally, the approximate load that may be drawn on a road of various grades from a level, to 45 feet per mile, may be found; for example, let it be required to determine the load that may be drawn upward on a road varying in its grades, from a level to 45 feet per mile, by an engine weighing five tons.

In Table No. II, statement No. 2, and col. 11, we have 13 tons drawn upwards, at the rate of 5 miles per hour, on an ascent of 45 feet per mile. In statement No. 3, and col. 10, of the same table, we have 12.9 tons, or about 13 tons, drawn at the rate of 10 miles per hour, up an ascent of 40 feet per mile. In statement No. 4, col. 9, we have the same load, at a speed of 15 miles per hour, up an ascent of 35 feet per mile, and in statement No. 5, col. 6, we have a little more than 13 tons, drawn at the rate of 20 miles per hour, up an ascent of 20 feet per mile. In the same table, we find in statement No. 1, col. 11th, that a five ton engine, when the road is favorable, is able to draw up an ascent of 45 feet per mile, 26 tons; and it may be readily inferred, that it is able to draw upwards on more moderate acclivities, the same load, at increased rates of speed,

By an inspection of Table III, it will appear, that a six ton engine is able to draw upward, on a road ascending, at the rate of 45 feet per mile, a gross load of nearly 33 tons at a slow speed, also that with nearly the same load, viz.: 32 tons, the engine is able to travel at a speed of 20 miles per hour on a level road.

It should moreover be remarked, that all the statements except No. 1, of each table, are considerably within the limits authorized by the power of adhesion between the wheels and the rails, even in the worst state of the road, frost and snow excepted.

The American Steam Carriage Company feel warranted in assuring the public, and especially those companies or individuals who maw favor them with orders for Locomotive Engines, that the foregoing conditions shall be punctually complied with, and that the performance of their engines shall be equal to those exhibited in the tables herein contained.

The subjoined testimonials will explain more fully the character and performance of the engines which this company propose to build.

There is much truth in the following remarks from the Philadelphia Commercial Herald,—and unless the citizens of New-York arouse themselves, the "Empire State" will indeed pay heavy tribute to Philadelphia, and Baltimore.

Pennsylvania.—In the hard march of Internal Improvements, which is daily producing such wonderful effects upon the prosperity of our country, Pennsylvania took the lead. Her distinguished citizen, Robert Morris, more than forty years ago, pointed out the advantages to be derived from this quarter, and projected nearly all the important improvements which the enterprize of a subsequent generation has now nearly completed. Influenced by his arguments, Pennslyyania commenced a system of Canals, designed to connect the Delaware with the Susquehanna, the Ohio, and the Lakes, long before the subject of Internal navigation had been seriously thought of in any other state. But "the race is not always to the swift." The first experiments failed, because they were in advance of the information, enterprize and resources of the times in which they were undertaken. Discouraged by this result, Pennsylvania fell back from that leading position which nature had assigned her, and which

New-York, under the auspices of her Clinton, soon after occupied.

The Grand Canal from the Hudson to Lake Erie was completed in spite of the deepest prejudice and the most persevering opposition, and no sooner was it opened, than the wisdom which had planned, and the patriotism which had carried it into successful operation, were universally admitted and admired.

The success of this magnificent enterprize led Pennsylvania once more to reflect upon her internal resources, and to appreciate the permanent advantages of her natural position. She has again entered the glorious race of improvement, and has put forth her giant energies to secure the victory. Will not that victory be hers?

An answer to this question is contained in the Toast which we remember to have heard from the lamented Clinton, on the occasion of the commencement of the Chesapeake and Delaware Canal. Speaking of the immense natural advantages of Pennsylvania, he described her as resting "with her foot upon the Ohio, and with the other upon the great Lakes." To this he might have added,—that stretching her broad arm of the Susquehanna into the most fertile districts of the State of New-York, and holding in that hand the key of communication with the great Erie Canal, she has the means of rendering a large portion of the "Empire State" tributary to her wealth.

In *Geographical* advantages for securing the commerce of the Great West, Pennsylvania stands unrivalled. New-York has an admirable communication with the Lakes,—but her high northern position deprives her of its advantages during a large part of the year. Virginia, by the Potomac, may communicate with the Ohio,—but she wants a market on the sea-board, and has physical obstacles to encounter, certainly beyond her present resources.

It is Pennsylvania only, which, by a single line of communication, developing a great portion of her internal resources, can embrace also the unbounded water communications of the Ohio, the Mississippi, and the great Lakes. This object is now on the verge of being accomplished. Nine-tenths of the cost has already been incurred.

Let the system as originally laid out, including the improvement of the north branch of the Susquehanna to the New-York line, be completed, and the single addition of a connection with the Ohio Canal be made, and the hopes of the most sanguine must be realized.

The aggregate of tolls received from the Schuylkill, Lehigh, Union, and the *unfinished* State Canals, and from the west branch of Schuylkill, Little Schuylkill, Mount Carbon, and Germantown Railroads, for the present year, thus far, has been $785,000. Hence some idea may be formed of the revenue the whole system will yield when completed.

INTERNAL IMPROVEMENTS.—We take the following account of the proceedings of a meeting of the inhabitants of the counties on the line of the contemplated canal, from Rochester to Olean. There appears to be a determination on the part of those residing near its contemplated route, to push it forward, and they will, we trust, succeed; as we deem the construction of *Canal and Railroad* banks, when judiciously and properly constructed, of far more importance to the country than *banks* of any other kind.

CANAL MEETING.—At a large and respectable meeting of the citizens of the counties of Cattaraugus, Allegany, Steuben, Livingston, Genesee, and Monroe, held at the court house, in the village of Geneseo, on the 20th day of November, 1833, for the purpose of adopting measures in furtherance of the construction of the Rochester and Olean Canal, with a branch to the village of Dansville; the Hon. James McCall, of Allegany, was appointed President; and George Williams, and James Faulkner, Esqs. were appointed Secretaries.

When the following resolutions were presented by the Committee, and unanimously adopted by the meeting.

Resolved, That the object of the meeting is to harmonize with the people of Allegany and other places along the line of the contemplated route of the canal, in the object prayed for in their several memorials, with the additional recommendation of a short branch to the village of Dansville, by the valley of the Caneseraga.

Resolved, That it is the deliberate opinion of this meeting, that since the construction of the Erie and Champlain Canals, no route has been designated, which, in its bearings on the great interests of the State, in the extent to which its influence will be felt, and the financial returns which may be reasonably calculated upon, can compare with that now under consideration.

Resolved, That we cannot reconcile it to our ideas of duty to ourselves, or the State we live in, not to manifest an interest in the busy movements of our enterprizing neighbors, Pennsylvania and Maryland, whose zeal and energy are untiring and unabated, and whose eyes are steadily fixed on the growing interests of Baltimore, and Philadelphia.

Resolved, That it be recommended to the several counties embraced in the object of this meeting, to call county meetings to provide the funds and send a delegate to the next Legislature, to further the general object of this meeting.

Resolved, That James McCall, George Williams, and George Mills, in the county of Allegany; Emery Wood, Henry Bryan, and F. S. Martin, in the county of Cattaraugus; Benjamin Gardiner, J. P. Landon, and M. Stoddard, in the county of Genesee; D. H. Bissel, James Faulkner, and Eli Hill, in the county of Livingston; and A. M. Schermerhorn, F. M. Haight, and Powell Carpenter, in the county of Monroe, constitute a county Committee, in their respective counties, to promote the circulation of a memorial to the Legislature, and that such Committee be authorized to appoint sub-committees in the several towns in their several counties, for the same purpose.

Resolved, That the proceedings of this meeting be published in all the papers in the several counties interested in the contemplated Canal, and in the cities of New-York and Albany.

JAMES MCCALL, Pres't.
P. C. FULLER, V. Pres't.
GEO. WILLIAMS, } Secretaries.
JAS. FAULKNER, }

WARREN, Nov. 21, 1833.

CANAL CONVENTION.—This body (says the Western Reserve Chronicle) adjourned on Friday last, sine die, after a session of three days. We cannot often witness ,in this section of the country, an assemblage embodying so great a share of talents and acquirements, or representing so large an amount of capital.

The deliberations were conducted with skill, promptness and dignity; and every fact, having any relation to the great object that occasioned this meeting, was, as far as practicable, elicited and investigated.

We can assure our readers, that the subject of forming an union between the Pennsylvania canals is now taken up in earnest; and we believe that our trade is about to be diverted to a mart more convenient, more natural, and more profitable, than that to which, for the last eight years, it has been artificially directed.

The delegates from the counties and cities of Philadelphia, Alleghany, and Pittsburgh, left here on Saturday, and were accompanied by several from Beaver, Trumbull and Portage, for the purpose of examining the route of the Mahoning canal from this place to Akron. From thence they will proceed to the routes of the Beaver and Sandy canal, and of the Massillon railroad; which, having examined, they will direct their course to Pittsburgh, where they will make out their report, which will designate one of the three as the most feasible and as uniting the most advantages. This decision will probably be considered as final, by all the parties concerned; and we hope that thereafter the efforts of the people of Pennsylvania and Ohio will be unitedly exerted in favor of the fortunate one, until it shall be completed.

Nov. 13, 1833—11 o'clock, A. M.

The convention was organized by Gen. Simon Perkins taking the chair, and the Hon. Wm. Rayen and R. P. Spalding, Esq. acting secretaries pro tem.

The objects of the meeting were explained by the chairman.

Gen. Abner Lacock was unanimously elected chairman: Zalmon Fitch, Esq. and Hon. Calvin Pease, secretaries.

The following, among other resolutions, were adopted by the meeting:

Resolved, That a committee, consisting of two persons from each county represented in this convention, be appointed by the respective delegates thereof, to report to this meeting a statement of facts in relation to the proposed union of the Pennsylvania and Ohio canals; presenting, in a concise manner as possible, the advantages resulting from such connexion to the commerce of the western country generally: its vast importance to the state of Pennsylvania, and the cities of Philadelphia and Pittsburgh; and the prospect it offers to capitalists, for a profitable investment of money.

Resolved, That a committee of five be appointed to examine the charters of the several companies authorised to effect a junction between the Pennsylvania and Ohio canals, and report upon the safety with which immediate measures may be taken, under the existing provisions, towards effecting the object in view.

Resolved, That a committee of five members from the counties of Trumbull and Portage, be appointed, whose duty it shall be to collect all such statistical information as may have a bearing upon the operations of a canal to unite the Ohio and Pennsylvania canals; and if required, to communicate the same, from time to time, to the delegates to this convention, from the state of Pennsylvania.

Resolved, That the president and secretaries be directed to transmit the proceedings of this convention, together with the reports of the various committees, to the governors of Ohio and Pennsylvania, requesting that the same be laid before the legislatures of the respective states for consideration.

"The tower of Pisa, in Italy, leans sixteen feet out of the perpendicular, so that strangers are afraid to pass under it; but as the plummet or line of direction falls *within its base or foundation*, it is in no danger of falling, if its materials keep together; and hence it has stood in this state three hundred years. But were an additional erection, of any considerable elevation, to be placed upon its top, it would undoubtedly soon tumble to ruins."

"Were the number of such persons increased but a thousand-fold, so that for every twenty scientific investigators now existing, twenty thousand were employed in surveying the various localities, aspects and operations of nature, in the animal, vegetable, and mineral kingdoms, on the surface of the earth and the ocean, and in the celestial regions,—*hundreds* of new facts would, in all probability, be brought to light, for *one* that is now discovered by the present contracted circle of scientific men, from which new and important conclusions in the arts and sciences might be deduced."

Great Cargo.—The ship Braganza has arrived a New Bedford with a cargo of 4300 barrels of sperm oil, the greatest quantity that we recollect having been brought in by any previous arrival.

National Gallery of Practical Science, London. [From the Repertory of Patent Inventions for August, 1833.]

It is surprizing, amongst the numerous scientific institutions which are so liberally supported in this country, that till within a short period there should have been none which had for its express object the advancement of mechanical science. We had long considered that an institution of this character would meet with the most extensive support, and are not disappointed, for in our visits to the *National Gallery of Practical Science* we daily meet with some new subject for our consideration, though we have constantly to elbow our way to any object which we are desirous of examining, particularly should our visit be late in the day.

Several subscription *soirees*, under the patronage of His Royal Highness the Duke of Sussex, have also been held at this institution. On each evening, a conversation on some practical application of the sciences has been given; in addition to which, numerous models, and other subjects of interest, were arranged in various parts of the gallery. At some of these meetings we had the pleasure of being present, and cannot but congratulate the managers in having broken through the barrier which heretofore excluded ladies from joining these highly intellectual treats.

The object of this institution is to afford every possible encouragement and facility for the practical demonstration of discoveries in natural philosophy, and for exhibiting new applications of known principles to mechanical contrivances of general utility. In pursuance of these objects, several highly valuable and interesting experiments have already been tried; amongst others, may be mentioned a series of experiments on the production of high velocities to track-boats, such as have been some time in use on the Paisley canal. It had been stated, though not generally believed, that these boats, when caused to travel at a speed of from ten to twelve miles the hour, did not offer so much resistance as when travelling at lower speeds; this soon became a question of great importance to every engineer, as well as others; more particularly to those who were directly or indirectly interested in canal property, and hence an extensive experiment was gone into, under the superintendance of Mr. Telford, aided by other eminent engineers. The canal in the national gallery offering every convenience, the results were satisfactory, and will be highly useful in improving this description of conveyance. It was proved that, by the application of means to produce high speeds to these boats, they have a tendency to rise to the surface and displace less water, and consequently do not require a greatly increasing power to propel them as was generally considered. These experiments afterwards led to one of the Paisley boats being brought to the Paddington canal, and a continuation of experiments on the large scale. This boat was drawn by fast horses at the rate of from ten to fifteen miles the hour, and similar results were obtained as upon the smaller scale; and we believe that all parties were satisfied, that a speed of at least twelve miles an hour on our canals will soon become general, though we do not consider that horses will be so well adapted to this purpose as fixed engines.

There have also been a series of experiments made in respect to the application of undulating railroads, according to the proposition of Mr. Badnall. We were not present at any of the trials, but in our last number we gave our opinion of what might be expected to result from such an application. We have mentioned these two experiments in the first place, because they are not mentioned in the catalogue, to which we will now turn, taking the different subjects according to their numerical order.

No. 1. Newly discovered System of generating Steam. By Jacob Perkins.—This very simple yet beautiful system of generating steam, is, we understand, getting into use in fixed engines, in steamboats, and has been tried for a length of time on the Liverpool and Manchester railroads, with every prospect of the most decided success. The average distance which the locomotive carriages travel, before the tubes of the boiler are destroyed, is about 3000 miles. The carriage in which Mr. Perkins' system of circulation is applied, has travelled upwards of 20,000 miles without the tubes giving way. In consequence of these results, the directors have caused two new carriages to be constructed, which are to be in every way alike, excepting that to one is to be added the plates to produce the circulation of the water. The working of these two carriages will determine, in a great measure, the value of Mr. Perkins' invention, as applied to this description of boiler. But this principle of generating steam is also extensively applicable in the production and manufacture of spirits, sugar, salt, indigo, soda, soap, and other articles depending on ebullition with continuous circulation.

No. 2. Steam Gun. By the same.—We recommend our country, as well as our town readers, to take the first opportunity to see this destructive engine: nothing can better exemplify the powers of steam. This instrument is capable of throwing, in any direction, a stream of seventy balls in four seconds, with a strength equal to gunpowder.

No. 3. Combustion of the Hardest Steel. By the same.—A disc of soft iron, to which motion is given by a steam engine, attached to the boiler of the steam gun, is turned with a velocity of 5,400 revolutions in a minute; and by placing a file, or other piece of the highest tempered steel, in contact with the periphery of the disc, the friction caused by the soft iron destroys or cuts the steel, producing thereby a brilliant and beautiful combustion.

The peculiar result produced by this instrument is very interesting. A machine on similar principles has lately been patented for cutting and grooving marble, by the use of a circular disc of soft metal, which revolves with immense velocity.

No. 4. Compression of Water. By the same.—An apparatus which, by hydrostatic pressure, compresses water to an extent equal to a fourteenth part of its volume. The force employed is equivalent to a pressure of 30,000 lbs. to the square inch, and is applicable to other liquids.

In most of our works on natural philosophy water is treated as incompressible and non-elastic; by this apparatus the opposite of these two propositions is clearly shown. There was considerable difficulty in getting a vessel capable of resisting so high a pressure; and the chief feature of this instrument is the manner of constructing the cylinder, which is formed of a series of concentric tubes; thus the inner or smaller tube is first formed by welding, and is turned accurately on the outer surface; the next tube is then formed, and is accurately turned on the inner surface, and the bore of this second or outer tube is just too small to receive the first tube; but in order that it may do so, it is heated, till, by expansion, it is capable of receiving the first tube within it, and in cooling, the second tube shrinks on the first tube, and strongly embraces them together; a third tube, a fourth, and so on, are similarly put on till a cylinder is produced capable of withstanding any extent of pressure.

No. 5. Steel Engraving, and Unlimited Transfer or Reproduction of the Subject or Design. By the same.—Some of the most beautiful and highly finished engravings of the present day are produced by the exercise of this invention; to effect which a steel plate is first softened to such a state of ductility as to permit the engraver to use the finest tools with nearly the same ease as on a copper-plate. When the design is finished, the plate is hardened by a process of carbonization, and it is then not only available to the production of a hundred times as many impressions as a copper-plate would yield, but is also made the means of forming other plates, almost *ad infinitum*, by transfer of the subject thereto in perfect *fac simile.*

This transfer is made by passing a cylindrical piece of softened steel over the hardened plate, with a pressure sufficient to give it a complete impression *in relievo;* and this cylinder, being hardened, is then used to transfer the subject to any required number of soft plates, which plates may again be used, by a similar process, in endless reproduction.

To Mr. Perkins we are greatly indebted for his discoveries in this branch of the arts: he may be said to be the father of steel plate printing. In a manufacturing point of view this invention is most highly valuable: the power of multiplying plates, whether on steel or copper, by this ingenious means of transferring designs from hardened surfaces, is unlimited; any number of plates of soft metal may be produced from one engraving by the artist, which may be afterwards hardened. The printers of silks, muslins, calicoes, &c. are thus enabled to expend large sums of money in paying the best artists for designing over a small surface, and executing the same in the best manner of their art. Their design may then be multiplied to the extent required, particularly in covering the whole surface of printing cylinders, which is now very commonly practised.

A PORTABLE DRY DOCK.—A gentleman of our city, who was recently at Pittsburg, has described to us a Portable Dry Dock, which is in advantageous use there, and which should be introduced in every sea port in the United States. It is formed of strong timber, well planked at the sides and bottom, and at one end. At the other end a gate is constructed, such as is sometimes used as a lock gate, which is closed when required, so as to form a firm and perfect barrier against the admission of water. At the planked and fixed end of the Dock is placed a small engine, the cost of which did not exceed three hundred dollars. This is employed to work four pumps, by which the water is taken from the dock with rapidity and ease.

When a vessel is about to be "taken into dock," certain valves of the simplest construction are opened, and the dock is immediately filled with water: assisted by stone ballast, it sinks to a sufficient depth to admit the vessel; the gates are then opened, and she is floated in. In five hours from the time the preparations to take in a vessel are commenced, she may be admitted into the dock and safely "shoved up," so as to enable the carpenters to work at the bottom with perfect security and comfort, and in an ample space.

The whole cost of this dock did not amount to twelve hundred dollars. It has been in constant and successful use at Pittsburg for upwards of two years, and no doubt of its competency for all the purposes of repairing the bottoms of vessels, and for all the uses of "Dry Dockage," is there entertained.

This "Dry Dock" has been used on the Ohio for the repairs of steamboats of the largest class, exceeding 600 tons in burden, and, therefore, as large as most of the shipping on the sea-board of the United States.

During the prevalence of the cholera on the Ohio last summer, a large steamboat went to Pittsburg to repair: that fatal disease was supposed to prevail on board of this boat, and objections to her repairing near Pittsburg were loudly expressed. She towed the dry dock down the Ohio, and having carried it to a proper place, she went into it, was completely repaired, and then towed it back to Pittsburg.

The inventor and constructor of this valuable work is Mr. Thomas Cunningham, of Pittsburg, now residing there: he is an ingenious, industrious, and respectable mechanic. If this notice of his work shall promote his fortune, the gentleman who has communicated this statement will be highly gratified.

It is understood that Mr. Cunningham has obtained a patent for his Portable Dry Dock.

The Marquis of Blandford's Apiary, on Mr. Nutt's System. [From the London Mechanics' Magazine.]

Sir,—From the interest which you have uniformly taken in whatever relates to the extension of Mr. Nutt's invaluable system of bee management, (see page 174 of Vol. I. of this work,) I am induced to forward to your notice a detail of the successful results of that system, in the hands of the Marquis of Blandford, at Delabere Park, near Reading.

His lordship's park is most delightfully situated, about a mile from the romantic and retired village of Pangebourne, in Berkshire. The choice of the situation for the apiary is most excellent and delightful. It is at the top of a tower, forty-six feet high, situated in the midst of a wood, and commanding a most extensive view of the surrounding country, including a great part of Berkshire, Oxfordshire, Wiltshire, and Hampshire, the face of nature being clad in its endless variety of fertility, and old father Thames gently meandering through the valley formed by the distant hills which close the scene, but affording few prospective traces of those immense physical developements of his powers which render him truly the monarch of rivers. On the top of this tower his lordship possesses four colonies in collateral hives, and one inverted hive, all of which have been started since April. In the collateral hives the labors of the bees have been highly successful. From one colony his lordship has already separated a box containing 30 lbs. of honey, whilst another box, along with three small glasses, which cannot contain together less than 40 lbs., are quite ready for taking, and which will afford the sum of 70 lbs., and this without infringing upon the stock necessary for their winter subsistence. Upon my examination, the thermometer in the end boxes did not exceed 70°, whilst exposed to the atmosphere it was at 64°. A most remarkable contrast was afforded by the superior quality of the honey contained in the end box over that in the "pavilion of nature;" this superiority, particularly in the coloring matter, was most evident. Mr. Smith, the intelligent keeper, who quite follows in the steps of Mr. Nutt, informed me that the average quantity of honey produced from a cottage hive, upon the old system of management, did not exceed 30 lbs. to 40 lbs., whilst only in one case did he obtain, from a hive enlarged by eking, the amount of 50 lbs. It is extremely satisfactory and fortunate that, for the sake of reference, Mr. Nutt's system has fallen into such good hands, as both his lordship and the keeper appear to be as devoted to the system as they have been happy in the results.

I am not able to speak much regarding the progress of the inverted hives, of which his lordship has two—the one being at the top of the tower, and the other on the lawn at the back of the house—the former containing twenty-three glasses, and the latter thirty-three: this last is really a magnificent construction, an ornamental garden appendage such as few noblemen can boast. The bees had in each filled all the intermediate parts betwixt the hives and the glasses, and were just commencing their labors in the latter. Next summer his lordship will, I anticipate, reap an extensive harvest, both from these as well as his collateral hives, which are getting into prime and excellent condition for the winter.

I have troubled you with these details, because they relate to facts, and a publication of such facts is all that is required to introduce this admirable system of bee management into universal introduction. Let the example but be extended, and the practice inculcated, amongst our rural population, and, whilst it will greatly conduce to their advantage, we need no longer look to France or Italy for a supply of treasures which our own country and peasantry could so efficiently produce.

I am, sir, your obedient servant,

Abraham Booth.

Reading, July 22, 1833.

[In no country is there more facility afforded for the introduction of some such plan as in this, and the great interest many of our readers have expressed on the subject, induces us to insert another article from one of the best periodicals of the present day.—Ed. M. M.]

Description of an Improved Bee-Hive. By Mr. William Todd, Kirkmaiden. [From the Quarterly Journal of Agriculture.]

Mr. Todd, having, for some years past, made the management of bees a subject of study, has paid particular regard to the various kinds of hives, and the modes adopted for separating the bees from a part of their work, without injury to the remainder of the bees or their combs; and after trying various sorts of hives, has found none that he would compare with the one which is the subject of this paper. It is now four years since this hive was brought to its present improved state, and the experience of that prolonged trial has served to convince him more and more that it is all that can be desired, for the two purposes of *dividing swarms* and the *abstraction of honey without killing the bees.* Mr. Todd believes that the plan is hitherto confined to himself and two or three others in his neighborhood, but is desirous that its advantages should be made known.

The annexed cuts, figs. 1 and 2, exhibit this hive, the latter in a state denuded of the external covering, the former with the cover in its place, being the ordinary working state. The pedestal A is a pillar of wood or stone, of any convenient height, and fixed securely in the ground. On the top of the pillar is fixed a piece of stout board, having at each end a perforation or mortice. The stool or basement, B, on which the hive is set, is fastened to the former by means of two staples which pass through the mortices, and secured with two iron or wooden plugs. The stool is a board 14¾ inches square, with a landing place, C, in front, which is rounded off on the upper surface to prevent the lodgement of water. Round this board, at the distance of half an inch from its outer edge, is a frame of wood 1½ inches broad, and 1 inch in thickness. This is fixed upon the upper surface of the stool, having in the front side a door of entrance for the bees. This passage may be made 2 inches in width by ¼ inch in height on the outside, but widening inward to 3 inches by ½ inch in height. The side of the frame opposite to the entrance is attached to a slip bottom of ½ inch in thickness, fitted to slide out like a drawer, thereby affording the means of cleaning out the bottom of the hive, and on which a supply of food can be placed when necessary. The inside measure of this

Fig. 1.

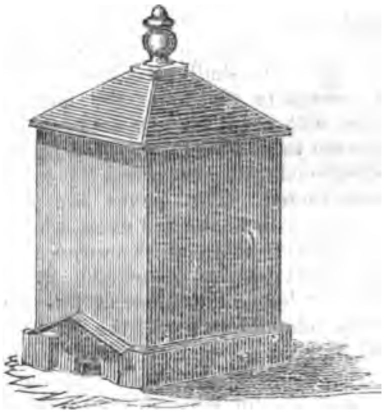
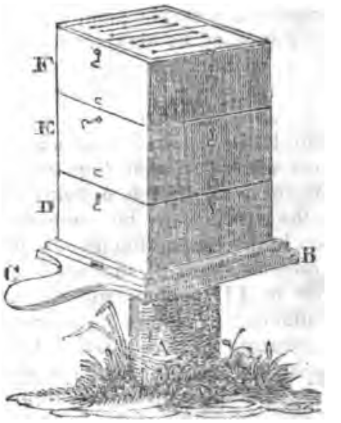


Fig. 2.



frame should correspond to the inside dimensions of the boxes.

The body of the hive is made of deal, about one inch in thickness. Its dimensions are 10¾ inches square inside measure, and the total height about 19½ inches, but divided into three stories or compartments, D, E, F, each 6½ inches high, and separable from each other as occasion may require. Each box is furnished with a top and bottom perforated with oblong slits, as seen in the top of fig. 2; these are of hard-wood, ¼ inch thick, and each formed of two pieces. Each half of the tops and bottoms have three slits, each about ⅓ inch in width, and so arranged, that, when the bottom of one compartment or box is applied to the top of any other, the slits shall all coincide to allow free passage to the bees; the bottoms are secured with small buttons, to prevent their falling out in handling, but allowing them to be displaced with ease when the comb is to be abstracted. The boxes are united to each other with hooks and eyes, which must all be placed at equal distances from the edges of the box, to insure the application of any one box to any other of the set. One cover is adapted to fit all the boxes; it is required to be of thick wood, in order that the eyes of the hooks may be at the same distance from the edge as those of the boxes, its length and breadth being exactly the same as the body of the hive. The cover may be made of a single piece of board, or it may be improved by making it in two layers, with a vacant space between; a few small holes may then be perforated in the lower half, and one larger one in the upper portion, the latter to be stopped with a cork, and opened when occasion requires.

The above is all that is essential to this hive, but the whole may be secured by the cover, fig. 1, the outer dimensions of which correspond with those of the stool or basement, that is 14¾ inches square, and the height sufficient to admit the three boxes or compartments of the hive. A folding flap is provided on the back part of the cover, to allow the slip bottom to be withdrawn and replaced, while in the front, as seen in the figure, a small part is cut away to leave the entrance clear.

In the management of this hive, when a swarm takes place, if the swarm is large, take three boxes, but if small, two will suffice. Should three boxes have been applied, the lower one ought to be removed about the middle or end of September, as there should never be more than two boxes allowed for a hive during winter, nor till the bees have thrown the first swarm; when a first swarm is thrown, add a third box, to prevent after-casts. If it is wished that the hive should not swarm at all, let a third box be added about the 1st of June, when the hive begins to appear crowded, and afterwards a fourth box, if it appear necessary.

To divide swarms, watch the time when the hives become crowded, and when drones begin to appear in the bee garden. Place a stool or basement, with an empty box on it, on each side of the hive you mean to divide, and have at hand a spare cover. Unhook the hive, and draw through between the boxes a piece of thin wire or a thin table knife, to separate any portions of wax that may adhere. In the evening, when the bees are mostly home, move the boxes gently, and insert between them two large sheets of tin plate; lift the upper box with one of the tin sheets, and place it over the box already provided on one of the stools; close the entrance of this stool, and take out the tin plate; put the cover on the other portion of the hive, and remove it to the empty box on the other stool, and when all are properly secured, allow this division to remain open, that the stray bees may settle in it. Let it remain open during the following day, and at night shut it up, using precaution to admit the necessary air, and open the other division. Let the second be shut up, and the first open for twenty-four hours; and if the weather have been fine, you may set both at liberty; but if the weather have been unfavorable for bees going abroad, they must be kept apart a day longer. After this they will continue to work as separate swarms.

The person chiefly employed in shifting the boxes may be protected from the bees by a broad hat with a veil tied round the hat, and round the shoulders, made of calico, with a piece of gauze or cat-gut in front, and on the hands a pair of gloves, and over these a pair of woollen mittens, the clothes well buttoned up and secured.

Should the hive at killing time consist of three boxes, and the lower one be considered but partially filled, and should it, together with the middle one, be sufficient for the support of the hive, the upper box may then be taken away. To do this, disengage the upper box as before directed, and insert the sheets of tin plate; take away the upper box and lay it on a stool at 30 or 40 yards distance. Put the cover on the remaining boxes, and allow the bees free passage in both divisions. The bees in the removed box may be left alone for a little, and all that rise will fly back to the old stool, where, finding the hive as usual, they will remain. The bees in the separated box soon get tame when parted from the body of the hive, and may be blown out with bellows, or thrust out with a quill, and when once they take wing, they will go back to the old stool. Care should be taken at this season of the year to observe if the queen bee be in the separated box, that she may be preserved and put back safely to the hive.

When it is found necessary to feed bees, a trough of tinned iron, 10½ inches long, 4 inches wide, and 1 inch nearly in depth, with a floating lid of nearly the same dimensions, made of very thin fir wood, and bored like a sieve. This is filled with diluted honey, or thin syrup of sugar; and having put the floater upon it, draw out the slip behind, and put in the feeder, which must be so near the size of the opening as not to let a bee pass when it is in, and at the same time allow it to go in freely. The hive is then shut up to prevent other bees from having admission.

When weak swarms are fed in the ordinary way, without shutting them up, the bees of neighboring hives are attracted, who not only carry off the food given, but, after it is done, continue to rob the weak hive of all their store, if they have any. Feeding in this way often does harm rather than good.

In feeding, it is advisable to give the bees daily as much as the feeder will contain for a succession of days, if they continue to take it up, until they have got what may be considered proper or sufficient. During this time they are closely shut up, and after feeding is dropped, let them be kept in till they settle, and till the neighboring swarms, if they be in motion, settle also, when the passage may be left open. This prevents them from being the prey of neighboring swarms.

[*From the New-York Farmer.*]

Eggs of the Silk Worm.—On opening a cocoon and carefully taking off the shell of the chrysalis, the miller or perfect insect is exhibited entire. The insides of the miller appear to be composed wholly of eggs, without the least appearance of any other parts or members. It requires leisure and patience to ascertain the number of eggs in a single insect—a little more than we possess. Assigning the undertaking, therefore, to one of the fair sex, who sometimes, to say the least, possess the above requisites, we found the number to be about three hundred. Multiplying this number by 100, the product is 30,000 eggs, which will produce nearly as many worms. What ample and beautiful provision Providence has made to render this insect useful to man! If each one only laid a very few eggs, nearly the whole brood would be required to propagate the race, leaving so few cocoons that could be reeled, that none but queens and princesses could afford to wear the "royal purple."

Improved Live Stock.—The Hon. Henry Clay, while at his recent visit to Albany, offered for a bull and a heifer calf, six months old, belonging to Gen. S. Van Rensselaer, jr. four hundred dollars, which were refused.

They were from the famous stock of short horn Durham cattle, imported by Gen. S. Van Rensselaer in 1823, from the herd of Mr. Champion, England.

We are also informed that Mr. Bement, of Albany, is about importing some of the late improved breed of Durham cattle, as well as some of the much esteemed Southdown sheep.

Mr. Hawes, an English gentleman, lately settled near Albany, brought out with him last fall some of the Berkshire breed of hogs, which were very much admired at the fair, and the demand for the pigs was so great that he could not supply one half the demand.

We have two most beautiful pigs, or rather hogs, of this breed, three months old, obtained from Mr. Brientnall, of Goshen, N. Y. We have not had the pleasure of seeing Mr. Hawes' pigs, but if they are superior to ours, there is no wonder that the demand exceeds the supply.

Valuable Heifer Calf.—The famous white cow, Dulcibella, an imported full bred improved Durham Short Horn, exhibited by Mr. C. N. Bement, at the late cattle show and fair, held at the city of Albany, has since produced a heifer calf, for which, we are informed, he refused fifty dollars before she was twenty-four hours old.

Cutting off Potato Blossoms.—We have inserted notices of the increased products from this practice. A writer in the New-England Farmer made an experiment, which resulted in obtaining a less quantity from the row deprived of the blossoms.

Exhibition of Dahlias.—A gentleman who has returned in one of the late packets from England, was at an exhibition of dahlias at Cambridge, in September, shown by the Horticultural Society, and was told that upwards of *one thousand varieties* of dahlias were exhibited.

[From the Washington Globe—Extra.]

MESSAGE

Of the President of the United States to both Houses of Congress.

FELLOW-CITIZENS OF THE SENATE,
AND HOUSE OF REPRESENTATIVES:

On your assembling to perform the high trusts which the people of the United States have confided to you, of legislating for their common welfare, it gives me pleasure to congratulate you upon the happy condition of our beloved country. By the favor of Divine Providence, health is again restored to us; peace reigns within our borders; abundance crowns the labors of our fields; commerce and domestic industry flourish and increase: and individual happiness rewards the private virtue and enterprize of our citizens.

Our condition abroad is no less honorable than it is prosperous at home. Seeking nothing that is not right, and determined to submit to nothing that is wrong, but desiring honest friendships and liberal intercourse with all nations, the United States have gained throughout the world the confidence and respect which are due to a policy so just and so congenial to the character of the American people and to the spirit of their institutions.

In bringing to your notice the particular state of our Foreign Affairs, it affords me high gratification to inform you, that they are in a condition which promises the continuance of friendship with all nations.

With Great Britain the interesting question of our Northeastern Boundary remains still undecided. A negociation, however, upon that subject, has been renewed since the close of the last Congress; and a proposition has been submitted to the British Government with the view of establishing, in conformity with the resolution of the Senate, the line designated by the Treaty of 1783. Though no definitive answer has been received, it may be daily looked for, and I entertain a hope that the overture may ultimately lead to a satisfactory adjustment of this important matter.

I have the satisfaction to inform you that a negociation, which, by desire of the House of Representatives, was opened some years ago with the British Government, for the erection of light-houses on the Bahamas, has been successful. Those works, when completed, together with those which the United States have constructed on the western side of the Gulf of Florida, will contribute essentially to the safety of navigation in that sea. This joint participation in establishments interesting to humanity and beneficial to commerce, is worthy of two enlightened nations; and indicates feelings which cannot fail to have a happy influence upon their political relations. It is gratifying to the friends of both to perceive that the intercourse between the two people is becoming daily more extensive, and that sentiments of mutual good will have grown up, benefitting their common origin and justifying the hope, that by wise counsels on each side, not only unsettled questions may be satisfactorily terminated, but new causes of misunderstanding prevented.

Notwithstanding that I continue to receive the most amicable assurances from the Government of France, and that in all other respects the most friendly relations exist between the United States and that Government, it is to be regretted that the stipulations of the Convention concluded on the 4th July, 1831, remain in some important parts unfulfilled.

By the second article of that Convention it was stipulated that the sum payable to the United States should be paid at Paris in six annual instalments, into the hands of such person or persons as should be authorized by the Government of the United States to receive it; and by the same article the first instalment was payable on the 2d day of February, 1833. By the act of Congress of the 13th July, 1832, it was made the duty of the Secretary of the Treasury to cause the several instalments, with the interest thereon, to be received from the French Government, and transferred to the U. States in such manner as he may deem best; and by the same act of Congress, the stipulations on the part of the U. States, in the Convention, were in all respects fulfilled. Not doubting that a treaty thus made and ratified by the two Governments, and faithfully executed by the U. States, would be promptly complied with by the other party, and desiring to avoid the risk and expense of intermediate agencies, the Secretary of the Treasury deemed it advisable to receive and transfer the first instalment by means of a draft upon the French Minister of Finance. A draft for this purpose was accordingly drawn in favor of the Cashier of the Bank of the United States, for the amount accruing to the United States out of the first instalment, and the interest payable with it. This bill was not drawn at Washington until five days after the instalment was payable at Paris, and was accompanied by a special authority from the President, authorizing the Cashier or his assigns to receive the amount. The mode thus adopted of receiving the instalment was officially made known to the French Government, by the American Charge d'Affaires at Paris, pursuant to instructions from the Department of State. The bill, however, though not presented for payment until the 23d day of March, was not paid, and for the reason assigned, by the French Minister of Finance, that no appropriation had been made by the French Chambers. It is not known to me that up to that period any appropriation had been required of the Chambers; and, although a communication was subsequently made to the Chambers, by direction of the King, recommending that the necessary provision should be made for carrying the convention into effect, it was at an advanced period of the session, and the subject was finally postponed until the next meeting of the Chambers.

Notwithstanding it has been supposed by the French Ministry, that the financial stipulations of the treaty cannot be carried into effect without an appropriation by the Chambers, it appears to me to be not only consistent with the charter of France, but due to the character of both Governments, as well as to the rights of our citizens, to treat with the convention made and ratified in proper form, as pledging the good faith of the French Government for its execution, and as imposing upon each Department an obligation to fulfil it: and I have received assurances through our Charge d'Affaires at Paris and the French Minister Plenipotentiary at Washington, and more recently through the Minister of the United States at Paris, that the delay has not proceeded from any indisposition on the part of the King and his Ministers to fulfil the treaty, and that measures will be presented at the next meeting of the Chambers, and with a reasonable hope of success, to obtain the necessary appropriation.

It is necessary to state, however, that the documents, except certain lists of vessels captured, condemned, or burned at sea, proper to facilitate the examination and liquidation of the reclamations comprised in the stipulation of the Convention, and which by the 6th article France engaged to communicate to the United States by the intermediary of the legation, though repeatedly applied for by the American Charge d'Affairs, under instructions from this Government, have not yet been communicated; and this delay, it is apprehended, will necessarily prevent the completion of the duties assigned to the Commissioners within the time at present prescribed by law.

The reasons for delaying to communicate these documents have not been explicitly stated, and this is the more to be regretted, as it is not understood that the interposition of the Chambers is in any manner required for the delivery of those papers.

Under these circumstances, in a case so important to the interests of our citizens, and to the character of our country, and under disappointments so unexpected, I deemed it my duty, however I might respect the general assurances to which I have adverted, no longer to delay the appointment of a Minister Plenipotentiary to Paris, but to despatch him in season to communicate the result of his application to the French Government at an early period of your session. I accordingly appointed a distinguished citizen for this purpose, who proceeded on his mission in August last, and was presented to the King early in the month of October, since which time no despatches have been received from him. He is particularly instructed as to all matters connected with the present posture of affairs, and I indulge the hope, that with the representations he is instructed to make, and from the dispositions manifested by the King and his Ministers in their recent assurances to our Minister at Paris, the subject will be early considered and satisfactorily disposed of at the next meeting of the Chambers.

As this subject involves important interests, and has attracted a considerable share of the public attention, I have deemed it proper to make this explicit statement of its actual condition: and should I be disappointed in the hope now entertained, the subject will be again brought to the notice of Congress in such manner as the occasion may require.

The friendly relations which have always been maintained between the United States and Russia, have been further extended and strengthened by the treaty of navigation and commerce concluded on the 6th of December last, and sanctioned by the Senate before the close of its last session. The ratifications having been since exchanged, the liberal provisions of the Treaty are now in full force; and, under the encouragement which they have received, a flourishing and increasing commerce, yielding its benefits to the enterprize of both nations, affords to each the just recompense of wise measures, and adds new motives for that mutual friendship which the two countries have hitherto cherished towards each other.

It affords me peculiar satisfaction to state that the Government of Spain has at length yielded to the justice of the claims which have been so long urged in behalf of our citizens, and has expressed a willingness to provide an indemnification, as soon as the proper amount can be agreed upon. Upon this latter point, it is probable an understanding had taken place between the Minister of the United States and the Spanish Government, before the decease of the late King of Spain, and, unless that event may have delayed its completion, there is reason to hope that it may be in my power to announce to you early in your present session, the conclusion of a convention upon terms not less favorable than those entered into for similar objects with other nations. That act of justice would well accord with the character of Spain, and is due to the United States from their ancient friend. It could not fail to strengthen the sentiments of amity and good will between the two nations which it is so much the wish of the United States to cherish, and so truly the interest of both to maintain.

By the first section of an act of Congress passed on the 13th of July, 1832, the tonnage duty on Spanish ships arriving from the ports of Spain was limited to the duty payable on American vessels in the ports of Spain previous to 20th October, 1817, being five cents per ton. That act was intended to give effect, on our side, to an arrangement made with the Spanish Government, by which discriminating duties of tonnage were to be abolished in the ports of the United States and Spain on the vessels of the two nations. Pursuant to that arrangement, which was carried into effect on the part of Spain on the 20th of May, 1832, by a royal order, dated the 29th April, 1832, American vessels in the ports of Spain have paid 5 cents per ton, which rate of duty is also paid in those ports by Spanish ships: but, as American vessels pay no tonnage duty in the ports of the United States, the duty of five cents payable in our ports by Spanish vessels under the act above mentioned is really a discriminating duty operating to the disadvantage of Spain. Though no complaint has yet been made on the part of Spain, we are not the less bound by the obligations of good faith to remove the discrimination: and I recommend that the act be amended accordingly. As the royal order above alluded to includes the ports of the Balearic and Canary Islands, as well as those of Spain, it would seem that the provisions of the act of Congress should be equally extensive; and that for the repayment of such duties as may have been improperly received, an addition should be made to the sum appropriated at the last session of Congress for refunding discriminating duties.

As the arrangement referred to, however, did not embrace the Islands of Cuba and Porto Rico, discriminating duties, to the prejudice of American shipping, continue to be levied there. From the extent of the commerce carried on between the United States and those Islands, particularly the former, this discrimination causes serious injury to one of those great national interests which it has been considered an essential part of our policy to cherish, and has given rise to complaints on the part of our merchants. Under instructions given to our Minister at Madrid, earnest representations have been made by the Spanish Government upon this subject, and there is reason to expect, from the friendly disposition which is entertained towards this country, that a beneficial change will be produced. The disadvantage, however, to which our shipping is subjected by the operation of these discriminating duties, requires that they be met by suitable countervailing duties during your present session; power being at the same time vested in the President to modify or discontinue them as the discriminating duties on American vessels or their cargoes may be modified or discontinued at these Islands. Intimations have been given to the Spanish Government, that the United States may be obliged to resort to such measures as are of necessary self defence; and there is no reason to apprehend that it would be unfavorably received. The proposed proceeding, if adopted, would not be permitted, however, in any degree to introduce a relaxation in the efforts of our Minister to effect a repeal of this irregularity by friendly negociation, and it might serve to give force to his representations by showing the dangers to which that valuable trade is exposed, by the obstructions and burthens which a system of discriminating and countervailing duties necessarily produces.

The selection and preparation of the Florida archives for the purpose of being delivered over to the United States, in conformity with the royal order, as mentioned in my last annual message, though in progress, has not yet been completed. This delay has been produced, partly by causes which were unavoidable, particularly the prevalence of the cholera at Havana; but measures have been taken which it is believed will expedite the delivery of those important records.

Congress were informed at the opening of the last session, that, "owing, as was alleged, to embarrassments in the finances of Portugal, consequent upon the civil war in which that nation was engaged," payment had been made of only one instalment of the amount which the Portuguese Government had stipulated to pay for indemnifying our citizens for property illegally captured in the blockade of Terceira.

Since that time a postponement for two years, with interest, of the two remaining instalments, was requested by the Portuguese Government; and as a consideration, it offered to stipulate that rice of the United States should be admitted into Portugal at the same duties as Brazilian rice. Being satisfied that no better arrangement could be made, my consent was given, and a royal order of the King of Portugal was accordingly issued on the 4th of February last, for the reduction of the duty on rice of the United States. It would give me great pleasure, if, in speaking of that country, in whose prosperity the United States are so much interested, and with whom a long subsisting, extensive, and mutually advantageous commercial intercourse has strengthened the relations of friendship, I could announce to you the restoration of its internal tranquillity.

Subsequently to the commencement of the last session of Congress, the final instalment payable by Denmark under the convention of the 28th day of March, 1830, was received. The commissioners for examining the claims have since terminated their labors, and their awards have peen paid at the Treasury as they have been called for. The justice rendered to our citizens by that government is thus completed, and a pledge is thereby afforded for the maintenance of that friendly intercourse becoming the relations that the two nations mutually bear to each other.

It is satisfactory to inform you that the Danish government have recently issued an ordinance by which the commerce with the Island of St. Croix is placed on a more liberal footing than heretofore. This change cannot fail to prove beneficial to the trade between the United States and that colony, and the advantages likely to flow from it may lead to greater relaxations in the colonial systems of other nations.

The ratifications of the Convention with the King of the Two Sicilies have been duly exchanged, and the Commissioners appointed for examinng the claims under it, have entered upon the duties assigned to them by law. The friendship that the interests of the two nations require of them being now established, it may be hoped that each will enjoy the benefits which a liberal commerce should yield to both.

A Treaty of Amity and Commerce between the United States and Belgium was concluded during the last winter, and received the sanction of the Senate; but the exchange of the ratifications has been hitherto delayed, in consequence, in the first instance, of some delay in the reception of the Treaty at Brussels, and, subsequently, of the absence of the Belgian Minister of Foreign Affairs at the important conferences in which his Government is engaged at London.

That treaty does but embody those enlarged principles of friendly policy, which, it is sincerely hoped, will always regulate the conduct of the two nations, having such strong motives to maintain amicable relations towards each other, and so sincerely desirous to cherish them.

With all the other European powers with whom the United States have formed diplomatic relations, and with the Sublime Porte, the best understanding prevails. From all, I continue to receive assurances of good will towards the United States, assurances which it gives me no less pleasure to reciprocate than to receive. With all, the engagements which have been entered into are fulfilled with good faith on both sides. Measures have also been taken to enlarge our friendly relations and extend our commercial intercourse with other States. The system we have pursued of aiming at no exclusive advantages, of dealing with all on terms of fair and equal reciprocity, and of adhering scrupulously to all our engagements, is well calculated to give success to efforts intended to be mutually beneficial.

The wars of which the southern part of this continent was, so long, the theatre, and which were carried on, either by the mother country against the States which had formerly been her colonies, or by the States against each other, having terminated, and their civil dissensions having so far subsided, as, with few exceptions, no longer to disturb the public tranquillity, it is earnestly hoped those States will be able to employ themselves without interruption in perfecting their institutions, cultivating the arts of peace, and promoting, by wise councils and able exertions, the public and private prosperity which their patriotic struggles so well entitle them to enjoy.

With those States our relations have undergone but little change during the present year. No re-union having yet taken place between the States which composed the republic of Colombia, our Chargé d'Affaires at Bogota has been accredited to the Government of New Grenada, and we have therefore no diplomatic relations with Venezuela and Equator, except as they may be included in those heretofore formed with the Colombian Republic. It is understood that representatives from the three States were about to assemble at Bogota to confer on the subject of their mutual interests, particularly that of their union; and if the result should render it necessary, measures will be taken on our part to preserve with each that friendship and those liberal commercial connections which it has been the constant desire of the United States to cultivate with their sister Republics in this hemisphere. Until the important question of re-union shall be settled, however, the different matters which have been under discussion between the United States and the Republic of Colombia or either of the States which composed it, are not likely to be brought to a satisfactory issue.

In consequence of the illness of the Chargé d'Affaires appointed to Central America at the last session of Congress, he was prevented from proceeding on his mission until the month of October. It is hoped, however, that he is by this time at his post, and that the official intercourse, unfortunately so long interrupted, has been thus renewed on the part of the two nations so amicably and advantageously connected by engagements founded on the most enlarged principles of commercial reciprocity.

It is gratifying to state, that, since my last annual message, some of the most important claims of our fellow-citizens upon the Government of Brazil have been satisfactorily adjusted, and a reliance is placed on the friendly dispositions manifested by it, that justice will also be done in others. No new cases of complaint have arisen: and the trade between the two countries flourishes under the encouragement secured to it by the liberal provisions of the treaty.

It is cause of regret, that, owing probably to the civil dissensions which have occupied the attention of the Mexican Government, the time fixed by the treaty of limits with the United States for the meeting of the Commissioners to define the boundaries between the two nations, has been suffered to expire without the appointment of any Commissioners on the part of that Government. While the true boundary remains in doubt by either party, it is difficult to give effect to those measures which are necessary to the protection and quiet of our numerous citizens residing near that frontier. The subject is one of great solicitude to the United States, and will not fail to receive my earnest attention.

The treaty concluded with Chili and approved by the Senate at its last session, was also ratified by the Chilian Government, but with certain additional and explanatory articles of a nature to have required it to be again submitted to the Senate. The time limited for the exchange of the ratifications, however, having since expired, the action of both Governments on the treaty will again become necessary.

The negotiations commenced with the Argentine Republic relative to the outrages committed on our vessels engaged in the fisheries at the Falkland Islands by persons acting under the color of its authority, as well as the other matters in controversy between the two Governments have been suspended by the departure of the Chargé d'Affaires of the U.S. from Buenos Ayres. It is understood, however, that a minister was subsequently appointed by that Government to renew the negotiation in the United States, but though daily expected, he has not yet arrived in this country.

With Peru no treaty has yet been formed, and with Bolivia no diplomatic intercourse has yet been established. It will be my endeavor to encourage those sentiments of amity and that liberal commerce which belong to the relations in which the independent States of this continent stand towards each other.

I deem it proper to recommend to your notice the revision of our consular system. This has become an important branch of the public service, inasmuch as it is intimately connected with the preservation of our national character abroad, with the interest of our citizens in foreign countries, with the regulation and care of our commerce, and with the protection of our seamen. At the close of the last session of Congress I communicated a report from the Secretary of State upon the subject, to which I now refer, as containing information which may be useful in any inquiries that Congress may see fit to institute with a view to a salutary reform of the system.

It gives me great pleasure to congratulate you upon the prosperous condition of the finances of the country, as will apppear from the report which the Secretary of the Treasury will in due time lay before you. The receipts into the Treasury during the present year will be more than thirty-two millions of dollars. The revenue derived from customs will, it is believed, be more than twenty-eight millions, and the public lands will yield about three millions. The expenditures within the year for all objects, including $2,572,240 99 on account of the public debt, will not amount to twenty-five millions; and a large balance will remain in the Treasury after satisfying all the appropriations chargeable on the revenue for the present year.

The measures taken by the Secretary of the Treasury will probably enable him to pay off in the course of the present year the residue of the exchanged four and a half per cent. stock, redeemable on the first of January next. It has therefore been included in the estimated expenditure of this year, and forms a part of the sum above stated to have been paid on account of the public debt. The payment of this stock will reduce the whole debt of the United States, funded and unfunded, to the sum of £4,760,082 08. And as provision has already been made for the four and a half per cents. above mentioned, and charged in the expenses of the present year, the sum last stated is all that now remains of the national debt; and the revenue of the coming year, together with the balance now in the Treasury, will be sufficient to discharge it. after meeting the current expenses of the Government. Under the power given to the Commissioners of the Sinking Fund, it will, I have no doubt, be purchased on favorable terms within the year.

From this view of the state of the finances and the public engagements yet to be fulfilled, you will perceive that, if Providence permits me to meet you at another session, I shall have the high gratification of announcing to you that the national debt is extinguished. I cannot refrain from expressing the pleasure I feel at the near approach of that desirable event.—The short period of time within which the public debt will have been discharged is strong evidence of the abundant resources of the country, aed of the prudence and economy wire which the Government has heretofore been administered. We have waged two wars, since we became a nation, with one of the most powerful kindoms in the world,—both of them undertaken in defence of our dearest rights—both successfully prosecuted and honorably terminated—and many of those who partook in the first struggle, as well as the second—will have lived to see the last item of the debt incurred in these necessary, but expensive conflicts, faithfully and honestly discharged, and we shall have the proud satisfaction of bequeath-ing to the public servants who follow us in the admintration of the Government, the rare blessing of a revenue sufficiently abundant, raised without injustice or oppression to our fellow citizens, and unincumbered with any burthens but what they themselves shall think proper to impose upon it.

The flourishing state of the finances ought not, however, to encourage us to indulge in a lavish expenditure of the public treasure. The receipts of the present year, do not furnish the test by which we are to estimate the income of the next. The changes made in our revenue system by the acts of Congress of 1832 and 1833, and more especially by the former, have swelled the receipts of the present year, far beyond the amount to be expected in future years upon the reduced tariff of duties. The shortened credits on revenue bonds, and the cash duties on woollens, which were introduced by the act of 1832, and took effect on the fourth of March last, have brought large sums into the Treasury in 1833, which, according to the credits formerly given, would not have been payable until 1834, and would have formed a part of the income of that year. These causes would of themselves produce a great diminution of the receipts in the year 1834, as compared with the present one; and they will be still more diminished by the reduced rates of duties which take place on the first of January next, on some of the most productive articles. Upon the best estimate that can be made, the receipts of the next year, with the aid of the unappropriated amount now in the Treasury, will not be much more than sufficient to meet the expenses of the year, and pay the small remnant of the national debt which yet remains unsatisfied. I cannot therefore, recommend to you any alteration in the present tariff of duties. The rate as now fixed by law on the various articles, was adopted at the last session of Congress, as a matter of compromise, with unusual unanimity, and unless it is found to produce more than the necessities of the Government call for, there would seem to be no reason at this time to justify a change.

But while I forbear to recommend any further reduction of the duties, beyond that already provided for by the existing laws, I must earnestly and respectfully press upon Congress the importance of abstaining from all appropriations which are not absolutely required for the public interest, and authorized by the powers clearly delegated to the United States. We are beginning a new era in our Government. The national debt, which has so long been a burthen on the Treasury, will be finally discharged in the course of the ensuing year. No more money will afterwards be needed than what may be necessary to meet the ordinary expenses of the Government. Now, then, is the proper moment to fix our system of expenditure on firm and durable principles: and I cannot too strongly urge the necessity of a rigid economy, and an inflexible determination not to enlarge the income beyond the real necessities of the Government, and not to increase the wants of the Government by unnecessary and profuse expenditures. If a contrary course should be pursued, it may happen that the revenue of 1834 will fall short of the demands upon it; and after reducing the tariff in order to lighten the burdens of the people, and providing for a still further reduction to take effect hereafter, it would be much to be deplored if. at the end of another year, we should find ourselves obliged to retrace our steps and imdose additional taxes to meet unnecessary expenditures.

It is my duty on this occasion to call your attention to the destruction of the public building occupied by the Treasury Department, which happened since the last adjournment of Congress. A thorough inquiry into the causes of this loss was directed and made at the time, the result of which will be duly communicated to you. I take pleasure, however, in stating here, that by the laudable exertions of the officers of the Department and many of the citizens of the District, but few papers were lost and none that will materially affect the public interest.

The public convenience requires that another building should be erected as soon as practicable, and in providing for it, it will be advisable to enlarge in some manner the accommodations for the public officers of the several Departments, and to authorize the erection of suitable depositories for the safe keeping of the public documents and records.

Since the last adjournment of Congress, the Secretary of the Treasury has directed the money of the United States to be deposited in certain State Banks designated by him, and he will immediately lay before you his reasons for this direction. I concur with him entirely in the view he has taken of the subject, and some months before the removal, I urged upon the Department the propriety of taking that step. The near approach of the day on which the charter will expire, as well as the conduct of the Bank, appeared to me to call for this measure, upon the high considerations of public interest and public duty. The extent of its misconduct, however, although known to be great, was not at that time fully developed by proof. It was not until late in the month of August thet I received from the Government Directors an official report, establishing beyond question, that this great and powerful institution had been actively engaged in attempting to influence the elections of the public officers by means of its money; and that in violation of the express provisions of its charter, it had, by a formal resolution, placed its funds at the disposition of its President, to be employed in sustaining the political power of the Bank. A copy of this resolution is contained in the report of the Government Directors before referred to; and however the same may be disguised by cautious language, no one can doubt that this money was, in truth, intended for electioneerieg purposes, and the particular uses to which it is proved to have been applied, abundantly show that it was so understood. Not only was the evidence complete as to the past application of the money and power of the Bank to electioneering purposes, but that the resolution of the Board of Directors authorized the same course to be pursued in future.

It being thus established by unquestionable proof, that the Bank of the United States was converted into a permanent electioneering engine, it appeared to me that the path of duty which the Executive Department of the Government ought to pursue, was not doubtful. As by the terms of the Bank charter, no officer but the Secretary of the Treasury could remove the deposites, it seemed to me that this authority ought to be at once exerted to deprive that great corporation of the support and countenance of the Government in such an use of its funds, and such an exertion of its power. In this point of the case the question is distincty presented, whether the people of the United States are to govern, through representatives chosen by their unbiassed suffrages, or whethor the power and money of a great corportion, are to be secretly exerted to influence their judgment, and control their decisions. It must now be determined whether the Bank is to have its candidates for all offices in the country, from the highest to the lowest, or whether candidates on both sides of political questions shall be brought forward is heretofore, and supported by the usual means.

At this time the efforts of the Bank to control public opinion, through the distresses of some, and the fears of others, are equally apparent, and if possible more objectionable. By a curtailment of its accommodations more rapid than any emergency requires, and even while it retains specie to an almost unprecedented amount in its vaults, it is attempting to produce great embarassment in one portion of the community, while through presses known to have been sustained by its money, it attempts by unfounded alarms to create a panic in all.

These are the means by which it seems to expect that it can force a restoration of the deposites, and as a necessary consequence extort from Congress a renewal of its charter. I am happy to know that, through the good sense of our people, the effort to get up a panic has hitherto failed, and that, through the increased accommodations which the State Banks have been enabled to afford, no public distress has followed the exertions of the Bank, and it cannot be doubted that the exercise of its power and the expenditure of its money, as well as its efforts to spread groundless alarm, will be met and rebuked as they deserve.

In my own sphere of duty, I should feel myself called on by the facts disclosed, to order a *scire facias* against the Bank, with a view to put an end to the chartered rights it has so palpably violated, were it not that the charter itself will expire as soon as a decision would probably be obtained from the court of last resort.

I called the attention of Congress to this subject in my last annual message, and informed them that such measures as were within the reach of the Secretary of the Treasury, had been taken to enable him to judge, whether the public deposites in the Bank of the United States were certainly safe, but that as his single powers might be inadequate to the object, I recommended the subject to Congress as worthy of their serious investigation, declaring it as my opinion, that an inquiry into the transactions of that institution, embracing the branches as well as the principal Bank, was called for by the credit which was given throughout the country to many serious charges impeaching their character, and which, if true, might justly excite the apprehension that they were no longer a safe depository of the public money. The extent to which the examination thus recommended, was gone into, is spread out upon your journals, and is too well known to be stated. Such as was made resulted in a report from a majority of the committee of ways and means, touching certain specified points only, concluding with a resolution, that the Government deposites might safely be continued in the Bank of the United States. This resolution was adopted at the close of the session by the vote of a majority of the house of Representatives.

Although I may not always be able to concur in the views of the public interest or the duties of its agents which may be taken by the other departments of the Government or either of their branches, I am, notwithstanding wholly incapable of receiving otherwise than with the most sincere respect, all opinions or suggestions proceeding from such a source, and in respect to none am I more inclined to do so than to the House of Representatives. But it will be seen from the brief views at this time taken of the subject by myself, as well as the more ample ones presented by the Secretary of the Treasury, that the change in the deposites which has been ordered, has been deemed to be called for by considerations which are not affected by the proceedings referred to, and which if correctly viewed by that Department rendered its act a matter of imperious duty.

Coming as you do for the most part, immediately from the people and the States, by election, and possessing the fullest opportunity to know their sentiments, the present Congress will be sincerely solicitous to carry into full and fair effect the will of their constituents in regard to this institution. It will be for those in whose behalf we all act, to decide whether the Executive Department of the Government, in the steps which it has taken on this subject, has been found in the line of its duty.

The accompanying report of the Secretary of War, with the documents annexed to it, exhibit the operations of the War department for the past year, and the condition of the various subjects entrusted to its administration.

It will be seen from them that the Army maintains the character it has heretofore acquired for efficiency and military knowledge. Nothing has occurred since your last session to require its services beyond the ordinary routine of duties, which upon the seaboard and the inland frontier devolve upon it in a time of peace. The system, so wisely adopted and so long pursued, of constructing fortifications at exposed points, and of preparing and collecting the supplies necessary for the military defence of the country, and thus providently furnishing in peace the means of defence in war, has been continued with the usual results. I recommend to your consideration the various subjects suggested in the report of the Secretary of War. Their adoption would promote the public service and meliorate the condition of the Army.

Our relations with the various Indian tribes have been undisturbed since the termination of the difficulties growing out of the hostile aggressions of the Sacs and Fox Indians. Several treaties have been formed for the relinquishment of territory to the United States, and for the migration of the occupants to the region assigned for their residence west of the Mississippi. Should these treaties be ratified by the Senate, provision will have been made for the removal of almost all the tribes remaining east of that river, and for the termination of many difficult and embarrassing questions arising out of their anomalous political condition. It is to be hoped that those portions of two of the southern tribes, which in that event will present the only remaining difficulties, will realize the necessity of emigration, and will speedily resort to it. My original convictions upon this subject have been confirmed by the course of events for several years, and experience is every day adding to their strength. That those tribes cannot exist, surrounded by our settlements, and in continual contact with our citizens, is certain. They have neither the intelligence, the industry, the moral habits, nor the desire of improvement which are essential to any favorable change in their condition. Established in the midst of another and a superior race, and without appreciating the causes of their inferiority, or seeking to control them, they must necessarily yield to the force of circumstances and ere long disappear. Such has been their fate heretofore, and if it is to be averted, and it is, it can only be done by a general removal beyond our boundary, and by the reorganization of their political system upon principles adapted to the new relations in which they will be placed. The experiment which has been recently made has so far proved successful. The emigrants generally are represented to be prosperous and contented, the country suitable to their wants and habits, and the essential articles of subsistence easily procured. When the report of the Commissioners now engaged in investigating the condition and prospects of these Indians, and in devising a plan for their intercourse and government is received, I trust ample means of information will be in possession of the Government for adjusting all the unsettled questions connected with this interesting subject.

The operations of the Navy during the year, and its present condition, are fully exhibited in the annual report from the Navy Department.

Suggestions are made by the Secretary, of various improvements which deserve careful consideration, and most of which, if adopted, bid fair to promote the efficiency of this important branch of the public service. Among these are the new organization of the Navy Board, the revision of the pay to officers, and a change in the period of time, or in the manner of making the annual appropriations, to which I beg leave to call your particular attention.

The views which are presented on almost every portion of our naval concerns, and, especially, on the amount of force, and the number of officers, and the general course of policy appropriate in the present state of our country, for securing the great and useful purposes of naval protection in peace, and due preparation for the contingencies of war, meet with my entire approbation.

It will be perceived from the report referred to, that the fiscal concerns of the establishment are in an excellent condition; and it is hoped that Congress may feel disposed to make promptly, every suitable provision desired, either for preserving or improving the system.

The General Post Office Department has continued upon the strength of its own resources to facilitate the means of communication between the various portions of the Union with increased activity. The method, however, in which the accounts of the transportation of the mail has always been kept, appears to have presented an imperfect view of its expenses. It has recently been discovered that from the earliest records of the Department, the annual statements have been calculated to exhibit an amount considerably short of the actual expense incurred for that service. These illusory statements, together with the expense of carrying into effect the law of the last session of Congress, establishing new mail routes, and a disposition on the part of the Head of the Department to gratify the wishes of the public in the extension of mail facilities, have induced him to incur responsibilities for their improvement beyond what the current resources of the department would sustain. As soon as he had discovered the imperfection of the method, he caused an investigation to be made of its results, and applied the proper remedy to correct the evil. It became necessary for him to withdraw some of the improvements which he had made, to bring the expenses of the Department within its own resources. These expenses were incurred for the public good, and the public have enjoyed their benefit. They are now but partially suspended, and that, where they may be discontinued with the least inconvenience to the country.

The progressive increase in the income from postages has equalled the highest expectations, and it affords demonstrative evidence of the growing importance and great utility of this department. The details are exhibited in the accompanying report from the Postmaster General.

The many distressing accidents which have of late occurred in that portion of our navigation carried on by the use of steam power, deserve the immediate and unremitting attention of the constituted authorities of the country. The fact that the number of these fatal disasters is constantly increasing, notwithstanding the great improvements which are every where made in the machinery employed, and the rapid advances which have been made in that branch of science, show very clearly that they are in a great degree the result of criminal negligence on the part of those by whom the vessels are navigated, and to whose care and attention the lives and property of our citizens are so extensively entrusted.

That these evils may be greatly lessened, if not substantially removed, by means of precautionary and penal legislation, seems to be highly probable: so far therefore as the subject can be regarded as within the constitutional purview of Congress, I earnestly recommend it to your prompt and serious consideration.

I would also call your attention to the views I have heretofore expressed of the propriety of amending the Constitution in relation to the mode of electing the President and the Vice President of the United States. Regarding it as all important to the future quiet and harmony of the people, that every intermediate agency in the election of these officers should be removed, and that their eligibility should be limited to one term of either four or six years, I cannot too earnestly invite your consideration of the subject.

Trusting that your deliberations on all the topics of general interest to which I have adverted, and such others as your more extensive knowledge of the wants of our beloved country may suggest, may be crowned with success, I tender you in conclusion, the co-operation which it may be in my power to afford them. ANDREW JACKSON.

Washington, 3d Dec. 1833.

CONGRESS—TUESDAY.

In the *Senate* the message was received, and on motion of Mr. King of Alabama, 5000 copies were ordered to be printed, and 1500 of the accompanying documents.

In the *House* after electing Thomas B. Randolph Sergeant at arms and reappointing the former doorkeepers, the usual resolutions for appointing Chaplains and furnishing the members with newspapers were adopted.

Mr. Hubbard moved that all the former rules, for the government of the House, be adopted, with the exception of the 56th and 76th. One of his propositions would be to increase the number of the members of the Standing Committees from 7 to 9, and of the other Committees from 3 to 5. He also intended to propose that the members should sit uncovered, until the Speaker should otherwise direct.

Mr. Williams said, that the proposition to sit without hats had often been submitted, and had always been rejected. It had been rejected on the ground that there was no convenient place for putting our hats; but he supposed that those who proposed the change would provide a place. He doubted also, whether we should increase the efficiency of the Committees by increasing their number. He wished time for reflection; and renewed his motion to lay the matter on the table.

Mr. Patton moved that the 9th Rule be also excepted; stating that it was his intention to move a modification of the 9th Rule; to the effect that the Speaker should vote in the first instance, in all cases, and that if the House be equally divided, the question should be lost.

The motion, as modified at the suggestion of Mr. Patton, was agreed to.

WEDNESDAY, DECEMBER 4.

In the Senate, Mr. Sprague, from Maine, and Mr. Calhoun, from South Carolina, appeared in their seats to-day.

The Chair laid before the Senate a communication from the Secretary of the Treasury, enclosing the annual report of the Treasurer of the United States, and a report concerning the removal of the Public Deposites from the U. S. Bank and its branches. 5000 copies of the report, and 1500 copies of the documents, were ordered to be printed.

Rhode Island Senators.

Mr. S. Wright offered the following resolution:

Resolved. That the proceedings of the Legislature of the State of Rhode Island, now upon the table of the Senate, showing the appointment of Elisha R. Potter, as a Senator to represent that State in the Senate of the United States, be referred to a select committee of five Senators to inquire and report upon the claim of the said Elisha R. Potter to the seat in the Senate now occupied by the Hon. Asher Robbins.

Mr. Clay wished the resolution to lie over, because as the rules of the Senate gave to its President the appointment of Committees; and as that functionary was not present, though doubtless good reasons could be given for his absence, he was unwilling that so important a duty should devolve on a substitute. It might, too, in such a case as the present be deemed proper by the Senate to appoint the Committee themselves. Hence he wished for time to reflect. After some discussion, *Mr. Wright* said, in proposing the resolution, he had supposed that the Committee would be chosen by ballot, and he would not object to the gentleman from Kentucky amending the resolution to that effect. Mr. Clay declined offering an amendment, but said if the resolution were so modified, he would no longer object to taking it up. Mr. Wright said he had no objection to make the modification, and sat down; but soon after rose again, and said he desired it to be understood that he had not intended to change the form of the resolution himself; but, if an amendment should be moved, he would not object to it.

Mr. Clay then moved to lay the resolution on the table.

And it was so ordered without a division.

In the House of Representatives the whole day was spent without any result on the question whether Mr. Moore, claiming to have received the certificate of three out of five sheriffs of the counties composing his congressional district, should be admitted to his seat, preliminary to the decision whether he or Mr. Letcher be entitled thereto.

[*From the Norfolk Herald, of 2d inst.*]

"FORTRESS MONROE, 1st DEC. 1833.

"The following is a list of officers and companies embarked on board the ships Herald and Jane, bound to Savannah, for the Alabama expedition:

"Companies A. H. and I. of the 1st Regiment of Artillery; B. and H. of the 3d; A. B. and C. of the 4th.

"The Regiment is commanded by Major Heileman of the 2d Artillery. His staff is composed as follows:—

Lieut. S. Dusenbury, 1st Art., Qr. Master.
Liut. J. Gates, Commissary of Subsistence.
Lieut. J. D. Johnston, 4th Art., Adj't.
Ass't Surgeons Heiskell and Beny.

The Company Officers are—

1st Artillery—Capt. F. Whiting,
Capt. Giles Porter,
Capt. H. W. Griswold,
First Lieutenant Fras. Taylor.
Second Lieuts. Edm'd French, Lorenzo Sitgreaves, and Wm H. Pettis,
Brevet 2d Lieut David B. Harris.
2d Artillery—Capt. Upton C. Frazer.
First Lieut. Samuel Ringgold,
First Lieut. Campbell Graham,
Second Lieut. Wm. Bryant.
Brevet 2d Lts. Roswell Lee and John H. Allen.
4th Artillery—Capt. I H. Gardner,
Capt. P. H. Galt,
Capt. J. M. Washington,
Second Lieut. Franklin E Hunt.
Brevet 2d Lieuts. J. L. Davis, Alex'r Shiras, and Henry Dupont.

"The Regiment is accompanied by the band of the Artillery School of Practice. The companies are nearly full and under good discipline.

"At Savannah the Regiment will take steamboats to Augusta, and from thence to Fort Mitchell, in Alabama, via Milledgeville."

We learn, says the Courier, that a letter has been received from our Consul at Vera Cruz, by a merchant of this place, containing information of the total loss of the United States schooner Porpoise, on the Reefs off Point San Anton Lisardo, about 25 miles S. E. of Vera Cruz—all hands safe.

FEMALE SEMINARY.—The Poughkeepsie Journal records the following, which we transfer to our columns in approbation of so worthy an enterprise. Let the wealthy and patriotic in every village follow the example by similar union of efforts.

We mention with pride, as an evidence of public spirit now prevailing in our village, that the beautiful residence of Mr. John Lockwood, situated on Mansion and Garden streets, was purchased a few days since by an association embracing twelve of our most active and influential citizens, for a FEMALE SEMINARY. The grounds about the house, amounting to about five acres, are elegantly formed and covered with a variety of shade trees, shrubbery, fruits of the choicest variety, &c. &c. constituting altogether a most inviting situation. The house is already spacious, and it is contemplated to erect such additions as will afford ample and convenient accommodations for a large number of young ladies.

The association is composed of the following gentlemen: Nathaniel P. Tallmadge, George P. Oakley, Walter Cunningham, Paraclete Potter, Elias Trivett, Abraham G. Storm, Henry Conklin, Jacob Van Benthuysen, James Grant, jr. Peter P. Hayes, James Bowne, and Stephen B. Trowbridge. These names are a sufficient guarantee that every thing about the establishment, the edifices, teachers, in short its entire management, will be so arranged and so conducted as to entitle it to a large share of the public confidence and support.

The price paid for the premises, together with another lot of about four acres, lying north of Mr. Geo. P. Oakley's residence, was *twelve thousand dollars.*

Another Steamboat Disaster.—The Steamboat Mount Vernon, on her way from Cincinnati to St. Louis, about thirty miles above the mouth of the Ohio, collapsed a flue, by which circumstance three persons were immediately killed, and a number of others scalded.

Narrow Escape.—A letter from Milledgeville, (Geo.) under the date of the 17th inst. says—"We had a very narrow escape from fire. The roof of the State House caught about one o'clock yesterday supposed by sparks from the chimney—fortunately, it was extinguished without any very serious damage being done." The Augusta Courier remarks—"The roof of the Representatives' Chamber at Milledgeville was very much injured by fire, and the public papers, in the alarm, thrown into confusion. The Legislature speaks of adjourning in consequence for 8 or 10 days." [A negro boy named Sam, was "the principal and efficient actor" in saving the building.—Would it not be well for the Legislature to purchase his freedom?]

The Cotton Crop.—We find in the North Carolina Observer, a condensed statement, showing the quantity of Cotton grown and consumed in, and exported from, the United States, during the year ending 30th Setember, 1833. Believing it will possess interest for many of our readers, we give it a place in our columns.

The exports from New Orleans reach the enormous total of 416,877 bales, but deduct from this 14,749 bales of the crop of the previous year, &c. it leaves	bales 403,443
(Same period 1832, 323,635.)	
The exports from Florida	23,641
(Same period 1832, 22,651 bales.)	
Exports from Alabama	129,366
(Same period 1832, 126,921.)	
Exports from Georgia	271,025
(Same period 1832, 276,437.)	
Exports from South Carolina	181,876
(Same period 1832, 173,872.)	
Exports from North Carolina, (of which only 517 bales went to foreign port,)	30,258
(Same period 1832, 28,462.)	
Exports from Virginia	30,829
(Same period 1832, 37,500.)	
Total crop of 1832-3	1,070,438
Total crop of 1831-2	987,477
Increase	82,961
The total exports to foreign ports	867,455
(Of which 630,245 bales were to England.)	
Ditto last year	891,798
Decrease	24,375

Consumption in the United States.

Quantity consumed, in	1832-3	194,412 bales.
do	1831-2	173,800
do	1830-1	182,148
do	1829-30	126,512
do	1828-9	111,850
do	1827-8	120,573
do	1826-7	103,483

N. B. The quantity taken for home manufacture, as shown by the above statement, does not include any Cotton spun in the Cotton growing States. We have no means of ascertaining the quantity taken for domestic use in the States South and West of the Potomac, and if we had, we are not aware of any practical use that could be made of the information.

Growth.

Total crop of	1824-5	560,000 bales.
do	1825-6	710,000
do	1826-7	937,000
do	1828-9	857,744
do	1829-30	976,845
do	1830-31	1,038,848
do	1831-32	987,478
do	1832-33	1,070,438

LATER FROM LISBON.—By the arrival at Boston of the *Dromo*, and at this port of the *Olitus*, from St. Ubes, we have accounts from Lisbon to 26th ult. The extent of Don Pedro's circuit around Lisbon was gradually enlarging, as the Miguelite forces retired. The following letter from the house of the American Consul, shows how important in the way of supplies was the consequence of this retreat of the Miguelites:

LISBON, OCT. 19.

Since we last wrote you on the 9th inst. the army of Don Miguel has been attacked and beaten, and has retreated about 50 miles from this, so that all the mills are now in the possession of Don Pedro, and as the quantity of wheat on hand is great, and more coming from the country daily, and large quantities of flour arriving from England and France, we look daily for a decree rescinding the admission of Flour. Your obedient servants,

J. P. HUTCHINSON & Co.

The Queen had been proclaimed at Estremadura, and it was reported that Coimbra had declared in her favor. Everything was going on well at Lisbon. Don Pedro had been confined a few days to the Palace by slight indisposition, but had recovered, and was as active as ever.

No. VI.

PITTSBURGH, November 3d.

I passed an evening most agreeably at Wheeling, with two or three prominent members of the Bar, who were distinguished by all that hearty courtesy, and frankness of character, which mark the western Virginian. A venison steak and flask of old Tuscaloosa (the relish, and flavour, of which, would have been Tocsin to the soul of Apicius, and made Anacreon uneasy in his grave) gave cordiality to the meeting. It was my first introduction into western society, and I could hardly have been initiated under better auspices as I went under the wing of an Ohio gentleman, whose warm hospitality, and endearing social qualities, united as they are to distinguished professional talents, seem to make him a universal favourite in this region. The conversation, animated, various and instructive, would supply material for a dozen letters. But the nervous expressions, and almost startling boldness, of western conversation would lose half its vividness, and power, when transferred to paper. I found myself however, catching occasionally something of the characteristic tone of those around me, and my new friends gave so encouraging a reception to each fresh fledged sally, that I live in the humble hope, of being able to express myself with sufficient propriety, by the time I reach the really outer west, to prevent people from detecting at once the early disadvantages, I have laboured under, in living so long in a land where every lip lisps homage to mincing Walker, and each tongue trembles in terrorem of terrible Johnson. In that event I may have both scenes and characters to describe when we meet, such as would now split my pen in telling.

Wheeling is one of the most flourishing places on the Ohio. The immense quantity of bituminous coal in the adjacent region, which may be had merely for the digging, gives it great advantages as a manufacturing place, while the rich back country and favourable position, on the river, especially in low water, when steamboats find Pittsburgh difficult of access, make the town a place of active trade. It lies in two parallel streets, beneath a hill extending along the river, and its smoky purlieus, when viewed from within, except to the eye of the man of business, are any thing but attractive. The principal tavern of the place where I lodged, is well supplied with bedchambers, and parlors, and a comfortable reading room, where the leading papers in the Union are taken. The attendance too, all the servants being blacks, is very good. Among them, a perfect treasure, in the shape of a genuine old Virginian negro, must not be forgotten. The features of Billy, (for that is the name of my sable friend,) are an exact copy of those generally introduced into Washington's picture when he is painted with his favourite groom in attendance; I piqued myself considerably upon discovering the likeness, when I afterwards found that the worthy Æthiop, was actually "raised," as he expressed it, in the Washington family. He is a professing member of the Baptist church, and I was much interested, while talking with the newly converted heathen, (for such he called himself prior to the "change") to find, how the precepts with which he had lately become indoctrinated, assorted with the ideas he had been brought up in as a slave; religion seemed only to have strengthened the bonds which held him to his master. "This new light," he said, "showed the old nigger" (I give his exact words) "that to whatever station God pleased to call him, there, it was good for the old nigger to be." I was told that he was rigidly attentive to his spiritual duties, and as for his worldly ones, I never met with a more thorough-bred and respectful servant. He is among the last of a race once numerous in the old dominion, but now fading from the face of the earth, *Sero in cœlum redeas*, and when thy dusky soul takes flight, thy name be immortal Billy, let thy statue, carved in ebony, be set up in Hudson's door-way, and a memoir of thy life flare in each intelligence office in the Union.

It was with no slight regret, that I parted with my friend S. when stepping aboard a pretty steamboat, called the Gazelle, to take my passage up the river; his foreign travel, and various opportunities, have given him habits of observation, which with a dash of humour, and ready flow of fine spirits, constitute a capital travelling companion. His literary tastes are well known to you, and I should not be surprised if at a future day, he should distinguish himself as another member of his family has so happily done, by committing to the press a few notes of his wanderings. I left him waiting for the downward boat, and we parted, promising to meet again in a few months at New-Orleans—each of us in the meantime traversing regions, from which the kingdoms and principalities of Europe, might be carved out, and never missed.

The snow of yesterday, yet covered the ground, as I rubbed along the shores of the Ohio, and those pictured woods, with the morning sun gleaming through their tall stems, and glistening on the powdered tree tops, were indescribably beautiful. The islets, particularly where the hues of the foliage were most vivid, shone like shields of silver blazoned with no mortal heraldry. Before noon, however, the sun, like a hungry lap-dog over a bason of ice-cream, licked up every particle of earth's fragile covering. The warm mist of Indian summer succeeded, the river became like glass, every island floated double upon its bosom, and each headland seemed to drop its cliffs against a nether sky. The harsh panting of our high-pressure engine, or the sudden flapping of a duck's wing, as he rose suddenly from under the bow of the boat, were the only sounds abroad. The day so still, so soft, and summery, seemed like the sabbath of the dying year.

The evening came on calm, and mellow, and the broad disc of the moon, slept as quietly on the fair bosom of the Ohio, as if her slumbers there had never been broken by the war-whoop, or reveille, from the shadowy banks around.

The peculiar scenery of the Ohio, has been so graphically described by Flint, and Hall, in their various writings upon the West, that I will not detain you by dwelling minutely upon its features. The prominent characteristics of the river are, a clear winding current, studded with alluvial islands, and flowing between banks, which now lie in a level esplanade of several hundred acres, elevated perhaps fifty feet above the water, and again swell boldly from the margin to the height of three or four hundred feet in headlands, which, when the mists of evening settle upon the landscape wear the appearance of distant mountains; when I add that an occasional farm house, with its luxuriant orchards, and other enclosures, may be found along the smaller "bottoms," while the larger ones, are frequently enlivened by a bustling village, reposing in their ample bosoms, you have the main features of the Ohio, as I have seen it between Wheeling and Pittsburg. The windings of the river present at every turn, some of the most beautiful views in the world, but the regular alternations of "bluff," and "bottom," give such a sameness to the landscape, that unless familiar with the points of the country around, one might be dropped in a dozen different places along the river, and not be aware of a change in his situation. Nature seems to have delighted in repeating again and again, the same lovely forms, into which she first moulded this favourite region.

We passed Rapp's flourishing settlement, called Economy, during the day, but only near enough to see the regular arrangement of the square brick dwellings, standing about twenty feet apart, on broad streets which intersect each other at right angles; the factories with their high cupolas; and the thriving orchards, and young vineyards, which stretch along the banks of the river beyond the suburbs. I may hereafter, if I have time to visit it, give you some account of the present condition of this settlement, which as you know belongs to a society organized upon Mr. Owen's plan. The site of the town was formerly a favorite rallying point for the Delaware Indians, under their chief *Mouahatoocka*, whose council fires once blazed where now the smoke of a dozen factories rolls from the chimnies of the German emigrant. What a contrast between the toilsome race whose clanking machinery, is now the only sound that greets the ear as you near the shore, and the indolent savage, or laughter-loving Frenchman, who once stalked along the borders or danced over the bosom of the beautiful river.

"How changed the scene since merry Jean Baptiste
"Paddled his pirogue on La Belle Rivière,
"And from its banks some lone Loyola Priest
"Echoed the night song of the voyageur."

The afternoon sun shone warmly on the eastern bank of the river, where the increasing number of farm houses, and occasionally a handsome seat tastefully planted among them, with its hanging garden, not unfrequently kissed by the current of the river, indicated our approach to the city of Pittsburgh—the eastern head of the Mississippi Valley, and the key to the broad region bathed by its waters. Our course lay for a few moments among islands, that seemed to bloom in never-dying verdure, and then as we escaped from their green tincture, the tall cliffs of the Monongahela, blackened by the numerous furnaces, that smoke along their base, and pierced in various points with the deep coal shafts that feed their fires, frowned over the placid water. It was just sunset, and the triangular city, with its steeples peering through a cloud of dense smoke, and its two rivers spanned each by a noble bridge, that seem when thus reviewed, a reflection of each other—lay before us. On the right, the calm and full tide of the Monongahela, flowing beneath rocky banks, some three hundred feet in elevation, was shaded by the impending height, and reflected the blaze of a dozen furnaces in its sable bosom.

On the left, the golden tints of sunset still played over the clear pebbly wave of the Alleghany, and freshened the white outline of a long low-built nunnery, standing on a sudden elevation back from the river. The dusty city lay in the midst, the bridges springing from its centre terminating the view up both rivers; whilst the mists of evening were rapidly closing in, upon the undulating country that formed the back ground of the picture. Truly, the waters have here chosen a lovely spot for their meeting, and it was but natural that such a stream as the Ohio should spring from such an union. Looking backward now, I could see that river, like a young giant rejoicing in its birth, sweeping suddenly on its course, but turning every moment among its green islands, as if to look back till the last upon the home of its infancy.

We entered the Mononghahela, and disembarked a few hundred yards from the site of the old fort Du Quesne. The river was some *twenty-five* feet lower than usual, and giving my baggage to a dray-man in attendance, I ascended the bank, and soon found my way through streets, which though neither broad nor cheerful-looking are still well-built, to the Exchange Hotel on the opposite side of the town. Here I am now housed, and after delivering my letters, and looking farther about the place, you shall have the result of my observations.

H.

NEW-YORK AMERICAN.

NOVEMBER 30, DECEMBER 2, 3, 4, 5, 6—1833.

LITERARY NOTICES.

THE HAND, *its Mechanism and Endowments, as evincing design*, by SIR CHARLES BELL, &c. &c.—*Philadelphia*, CAREY, LEA & BLANCHARD.—Another of the Bridgewater treatises—liable to the same objection which all that have preceded it have called forth—that of running into other subjects than the one which it professes to treat exclusively; yet like all the rest, though wanting in unity, full of most valuable and instructive knowledge. The eminent surgeon who in this book puts before us the stores of long experience, apologizes at the outset for the style in which it is written, on the ground that he has been always too much absorbed in the practical details of his profession, to have had much time for the cultivation of mere literature. The apology was unnecessary, for though not a model for critics, his style is upon the whole less rugged, aud more intelligible, than that of his literary and strongminded collaborator, *Chalmers*. The high tone of moral and religious feeling which pervades this work, shows that the selection of Sir Charles Bell for such an ellucidation of the great subject prepared by the Earl of Bridgewater, was most judicious, as his manner of occasionally introducing views appropriate to his task, is ingenious. Take for instance the following extract, in which gratitude, the peculiar attribute of man, is viewed as the basis of religion:

It is this sense of gratitude which distinguishes man. In brutes, the attachment to offspring for a limited period is as strong as in him, but it ceases with the necessity for it. In man, on the contrary, the affections continue, become the sources of all the endearing relations of life, and the very bonds by which society is connected.

If the child, upon the parent's knee, is unconsciously incurring a debt, and strong affections grow up so naturally that nothing is more universally condemned than filial ingratitude, we have but to change the object of affection, to find the natural source of religion itself. We must show that the care of the most tender parent is in nothing to be compared with those provisions for our enjoyment and safety, which it is not only beyond the ingenuity of man to provide, but which he can hardly comprehend, while he profits by them.

If man, of all living creatures, be alone capable of gratitude, and through this sense be capable also of religion, the transition is natural; since the gratitude due to parents is abundantly more owing to Him "who saw him in his blood, and said, Live."

For the continuance of life, a thousand provisions are made. If the vital actions of a man's frame were directed by his will, they are necessarily so minute and complicated, that they would immedintely fall into confusion. He cannot draw a breath, without the exercise of sensibilities as well ordered as those of the eye or ear. A tracery of nervous cords unites many organs in sympathy, of which, if one filament were broken, pain and spasm, and suffocation would ensue. The action of his heart, and the circulation of his blood, and all the vital functions are governed through means and by laws which are not dependent on his will, and to which the powers of his mind are altogether inadequate. For had they been under the influence of his will, a doubt, a moment's pause of irresolution, a forgetfulness of a single action at its appointed time, would have terminated his existence.

Now, when man sees that his vital operations could not be directed by reason—that they are constant, and far too important to be exposed to all the changes incident to his mind, and that they are given up to the direction of other sources of motion than the will, he acquires a full sense of his dependence. If man be fretful and wayward, and subject to inordinate passion, we perceive the benevolent design in withdrawing the vital motions from the influence of such capricious sources of action, so that they may neither be disturbed like his moral actions, nor lost in a moment of despair.

Ray, in speaking of the first drawing of breath, delivers himself very naturally: "Here methinks, "appears a necessity of bringing in the agency to "some superintendant intelligent being, for what "else should put the diaphragm and the muscles "serving respiration in motion all of a sudden so "soon as ever the fœtus is brought forth? Why "could they not have rested as well as they did in "the womb? What aileth them that they must "needs bestir themselves to get in air to maintain "the creature's life? Why could they not patiently "suffer it to die? You will say the spirits do at "this time flow to the organs of respiration, the "diaphragm, and other muscles which concur to "that action and move them. But what raises the "spirits which were quiescent, &c., I am not subtle enough to discover."

We cannot call this agency, a new intelligence different from the mind, because, independently of consciousness, we can hardly so define it. But there is bestowed a sensibility, which being roused (and it is excited by the state of the circulation,) governs these muscles of respiration, and ministers to life and safety, independently of the will.

When man thus perceives, that in respect to all these vital operations he is more helpless than the infant, and that his boasted reason can neither give them order nor protection, is not his insensibility to the Giver of these secret endowments worse than ingratitude? In a rational creature, ignorance of his condition becomes a species of ingratitude; it dulls his sense of benefits, and hardens him into a temper of mind with which it is impossible to reason, and from which no improvement can be expected.

Debased in some measure by a habit of inattention, and lost to all sense of the benevolence of the Creator, he is roused to reflection only by overwhelming calamities, which appear to him magnified and disproportioned; and hence arises a conception of the Author of his being more in terror than in love.

Again in the annexed vindication of the necessity of pain:

It affords an instance of the boldness with which philosophers have questioned the ways of Providence, that they have asked—why were not all our actions performed at the suggestion of pleasure? why should we be subject to pain at all? In answer to this I should say, in the first place, that consistently with our condition, our sensations and pleasures, there must be variety in the impressions; such contrast and variety are common to every variety of sense; and the continuance of an impression on any one organ, occasions it to fade. If the eye continue to look steadfastly upon one object, the image is soon lost—if we continue to look on one color, we become insensible to that color, and opposite colors to each other are necessary for an impression. So have we seen that in the sensibilities of the skin variations are necessary to continued sensation.

It is difficult to say what these philosophers would define as pleasure, but whatever exercise of the senses it should be, unless we are to suppose an entire change of our nature, its opposite is also implied. Nay, further, in this fanciful condition of existence, did anything of our present nature prevail, emotions purely of pleasure would lead to indolence, relaxation, and indifference. To what end should there be an apparatus to protect the eye, since pleasure could never move us to its exercise? Could the windpipe and the interior of the lungs be protected by a pleasurable sensation attended with the slow determination of the will—instead of the rapid and powerful influence which the exquisite sensibility of the throat has upon the act of respiration, or those forcible yet regulated exertions, which nothing but the instinctive apprehension of death could excite?

To suppose that we could be moved by the solicitations of pleasure and have no experience of pain, would be to place us where injuries would meet us at every step, and in every motion, and whether felt or not, would be destructive to life. To suppose that we are to move and act without experience of resistance and of pain, is to suppose not only that man's nature is changed, but the whole of exterior nature also—there must be nothing to bruise the body or hurt the eye, nothing noxious to be drawn in with the breath: in short, it is to imagine altogether another state of existence, and the philosopher would be mortified were we to put this interpretation on his meaning. Pain is the necessary contrast to pleasure: it ushers us into existence or consciousness: it alone is capable of exciting the organs into activity: it is the companion and the guardian of human life.

In the paragraph which follows an argument is presented against that combination of fortuitous atoms from which materialists have sometimes maintained man might be formed, which is alike new and striking:

The bones of large animals and in great variety, are found imbedded in the surface of the earth.—They are discovered in the beds of rivers, they are found where no waters flow, they are dug up from under the solid limestone rock. The bones th exposed, become naturally a subject of intense i terest, and are unexpectedly connected with the i quiry in which we are engaged. Among other i portant conclusions, they lead to this—that there not only a scheme or system of animal structure pe vading all the classes of animals which inhabit th earth, but that the principle of this great plan of cre ation was in operation, and governed the formatio of those animals which existed previous to the reve lutions that the earth itself has undergone: that th excellence of form now seen in the skeleton of ma was in the scheme of animal existence long previo to the formation of man, and before the surface o the earth was prepared for him or suited to his con stitution, structure, or capacities.

In the last quotation which we have room for, fro a book which we recommend, as quite intelligible t all readers, as it certainly is instructive, reference i made to the opinions (erroneous it seems they were) of President Jefferson, concerning the Megalonix:

I have alluded to the observations of President Jefferson on the Megalonix. Having found a bone which by its articulating surface and general form, he recognized to be one of the bones of the phalanx of an animal of great size, he thought he could discover that it carried a claw; and from this circumstance, he naturally enough concluded (according to the adage—ex ungue leonem) that it must have belonged to a carnivorous animal. He next set about calculating the length of the claw, and estimating the size of the animal. Hd satisfied himself that in this bone, a relict of the ancient world, he had obtained a proof of the existence, during these old times, of a lion of the height of the largest ox, and an opponent fit to cope with the mastodon. But when this bone came under the scrutiny of Baron Cuvier, his perfect knowledge of anatomy enabled him to draw a different conclusion.

He first observed that there was a spine in the middle of the articulating surface of the last bone, which in this respect was unlike the form of the small bone in the feline tribe. He found no provision in this specimen of an extinct animal, for the lateral attachment of the bone, which we have just noticed to be necessary for its retraction. Then observing what portion of a circle this bone formed, he prolonged the line, and showed that the claw belonging to it must have been of such great length, that it could never have been retracted to the effect of guarding an acute and sharp point. The point, therefore, could not have been raised vertically, so as to have permitted the animal to put the foot to the ground without blunting the instrument! Pursuing such a comparison, he rejected the idea of the bone belonging to the feline tribe at all. His attention was directed to another order, the paresseux or sloths, which have great toes and long nails. Their nails are folded up in a different fashion; they just enable the animal to walk; but slowly and awkwardly, something in the same manner as if we were to fold our fingers on the palm of the hand, and bear upon our knuckles. On instituting a more just comparison between these bones of the ancient animal, and the correspoding bones of the paresseux, he has satisfied us, that the lion of the Amèrican President was an animal which scratched the ground and fed on roots.

One experiences something like relief to find that there never was such an enormous carnivorous animal as this, denominated megalonix.

LIGHTS AND SHADOWS OF GERMAN LIFE. 2 vols. Philad. CAREY, LEA & BLANCHARD.—Very pleasant reading, and somewhat out of the usual track. From the "Campaigns of a Man of Peace," we give a short chapter. The new soldier was just escaped from his garret as a teacher, and about to assume the duties of a pastor, when falling in with a Prussian detachment retreating before the victorious arms of Napoleon, he is suddenly converted into an Adjutant-General of an army of some 200 men:

On the third night of our march we took up our quarters at a little village, and having posted the advanced guards, we sat down—the commander-in-chief, the carabinier, and I, to supper. "We are, in fact," said the former, with complacency, "operating in the rear of Napoleon as I intended.

"It is all very well," replied the carabinier, drily, "provided he does not operate on *our* rears tomorrow!"

I felt my flesh creep at the possibility conveyed in this barbarous *jeu de mots*, and we were all three absorbed in the unpleasing reflections it suggested, when several shots, one after the other, accompanied by loud shouts of "the French! the French!—to arms!—to arms!" made us start from our seats, and stand looking at one another as stiff and motionless as the candles on the table.

The drums rattled, the four trumpeters blew with all their might, and the carabinier turned pale as death. To disguise my terror, I stamped about the room, crying, "Hollo! fire! fire, brave Prussians—fire!" trying all the time to find the door—but I saw nothing. It was as if I had been suddenly struck blind, and in my agony I burst open the cupboard of the hostess, calling out louder and louder; "This way, brave Prussians—this way—stick close to me!"

The old woman ran screaming to protect her property—the children shouted—the dogs barked—and a cat, on whose tail I had trodden, sprang over my head with a hideous yell, to the top of the stove.

The din and confusion which reigned around increased my panic, and I fully believed that the French were already in the room, mercilessly butchering the women and children.

"If ever I get out of this scrape," thought I, "let who will be adjutant-general in my place!"

My outrageous proceedings, which, fortunately for me, were most honorably interpreted by the commander and the petrified carbinier, inspired them with new courage. They drew their swords, and sallied forth to the troops, who had assembled outside the little inn. I followed, and it was with unspeakable joy that I felt myself in the dark; no eye saw me, and I might effect a retreat, which at least would prolong my life, if it did not illustrate my name. Though more disposed to be nervous at night than by day, I cannot call myself fearful; but on this occasion I was overcome with terror.

"Adjutant—forward—with twenty men to the church-yard! roared the lieutenant. "Our post is there attacked—if you should need succors, send to me."

The twenty men were soon in motion, and I, most unhappy doctor of moral philosophy, with a drawn sword at their head. "The devil's in this fellow," thought I, "has he forgotten that my hand has never wielded ought but pen, pencil or compass, that he should select me upon such a service?"

But it sufficed for him to suppose that I possessed courage; and my sense of honor inspired me for a moment, with enough of that quality to carry me to the post I was ordered to defend.

> "*Nunc* animis opus, Anea, *nunc* pectore firmo!
> Degeneres animos timor arguit."

With these and similar exclamations, which were wont to inflame me with enthusiasm in my lonely garret, I endeavored to whip up my fainting spirits. But a dimness came over my sight as we advanced, which was the cause of my taking the venerable wall of the churchyard for the enemy's line, and the grass which grew upon its top, and waved to and fro in the wind, for their bayonets. I sprung to one side, and cried, with all the energy of terror: "Fire! fire! fire!"—The men obeyed, and the flash of their muskets afforded a distinct view of the imagined foe.

"Quarter!—quarter!" cried several voices at once, and seven French light infantry soldiers crept out from under the wall, where they had lain concealed, and surrendered their arms. Had the fools remained quiet we should never have discovered them. We accordingly conducted our prisoners to head quarters, and the pride with which I marched them up to the commander-in-chief may easily be imagined.

He embraced me in the presence of all the troops, who were drawn up by the light of the stable lanterns and blazing pine-branches, before the inn door.

"Here, Adjutant-general," said he, with great solemnity, "you have distinguished yourself equally by your bravery and prudence, and you may depend upon my reporting this brilliant affair to his majesty in the most advantageous terms."

We learnt from the Frenchmen that a light company had been ordered to take up their quarters in the village; but on finding it unexpectedly occupied, as they believed from the uproar of our drums and trumpets, by a considerable body of Prussians, they had precipitately retreated, leaving behind them the seven prisoners, who had imprudently ventured too far a-head of their companions.

In my joy, I regaled my prisoners with the best of that was to be had; they were the first of Napoleon's heroes whom I had seen. While the scoundrels thanked me for their good cheer, I felt as though I might stand in need of their protection, since, in answer to my inquiry, whether there were many French in the neighborhood, they informed me that Davoust was on his march, with a whole division, from Saxony to Berlin.

I hurried with this news to my General, but Charlemagne, elevated by this first victory of his troops, he only rubbed his hands, and poured forth a volley of genuine German oaths, expressive of his delight. "*Sapperment*!" said he, "I am then *really* operating in the rear of the French army!

The carabinier on the contrary, looked discomforted, he shrugged his shoulders, knocked the ashes out of his pipe, and said nothing.

THE DOWN EASTERS, by JOHN NEAL. 2 vols. *New York:* HARPER & BROTHERS.—We have seen this book much praised, and we marvel at it. We have read it through—that is the volume and a half which comprize the first story: the "balaam," as Blackwood calls it, thrown in to fill out the second volume, we did not read. The design of the author is to give a faithful portraiture of the Yankee, as he was; for already he insists the *ginewine native* has all but ceased to exist. So far as fidelity to peculiarities of idiom and even of conduct are concerned, this may be, for aught we know, a well executed sketch—for the author is undoubtedly a quick and accurate observer of life;—but as a whole the story is incoherent, its incidents impossible, and their tendency most immoral. As for style, we take it for granted the author would consider it an affront to talk of such a thing, as whenever he means to be most effective, he sets all rules at defiance. Mr. Neal's genius—and genius he certainly has—seems incapable of a sustained effort. In brief sketches he may excel; but in the only two books of his that we have seen—that now before us, and that entitled, we believe, Authorship, and published three or four years ago—we think he fails. The Down Easters, in our judgment, is in all respects inferior to Authorship, and we know not how its perusal is to profit any one.

ELEMENTS OF NATURAL AND EXPERIMENTAL PHILOSOPHY, &c. &c. by the Rev. DAVID BLAIR. Revised and enlarged, &c. by E. A. SMITH. New York: MCELRATH, BANGS & HERBERT.—This little treatise, adapted, as the American editor assures us, to the present state of science, and carefully printed and illustrated with engravings, calculated to fasilitate the progress of the learner—furnished too, according to the mode so much in vogue, with questions at the bottom of each page, to test the memory, is, we presume, as good an elementary work on general physics as is to be found.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

☞ **TOWNSEND & DURFEE,** of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. } F3 tf

FOR SALE.

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

⁂ Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,

No. 264 Elizabeth street, near Bleecker street,

New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part o the New-York and Harlæm Railroad, now in operation.

J25 tf

RAILROAD CAR WHEELS AND BOXES,

AND OTHER RAILROAD CASTINGS.

☞ Also, AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyer's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Rail road Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 19th to the 25th of November, 1833, *inclusive.*

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*	
Nov'r. 19..	6 a. m.	29	30.25	NW	moderate		clear	
	10	36	30.25	..	..	NW	fair	
	2 p. m.	40	30.21		..		..	
	6	37	30.25		fresh		..	
	10	34	30.28		..		..	
" 20..	6 a. m.	31	30.37	WSW	moderate	W by S	..	
	10	35	30.40	NW	..	W	cloudy	
	2 p. m.	40	30.42	..	..	..	..	
	6	37	30.47	..	..	..	fair	
	10	34	30.50	..	..		clear	
" 21..	6 a. m.	32	30.50	NNE			cloudy	
	10	38	30.46	E by N	fresh		..	
	2 p. m.	44	30.41	SSE	..	SE	..	
	6	44	30.35	..	..	..	..	
	10	44	30.30	..	moderate	..	..	
" 22..	6 a. m.	44	30.05	..	..	..	rainy	
	10	44	30.00	ESE	..	SW	..	
	2 p. m.	40	29.95	N	..	..	rain	
	6	42	29.90	NNW	..	..	fair	
	10	40	29.89	..	..	..	..	
" 23..	6 a. m.	36	29.90	WSW	..	WSW	..	
	10	40	29.94	..	..	..	clear	—smoky
	2 p. m.	46	29.90	W by S	..	..	..	..
	6	44	29.97	WNW—WSW	..		..	..
	10	42	30.05	WSW	..		..	
" 24..	6 a. m.	40	30.18	..	light	..	cloudy	
	10	43	30.19	..—W	..	..	fair	
	2 p. m.	46	30.15	W by S-SW-W	moderate	..	cloudy	
	6	42	30.15	SW by W	..	..	..	
	10	42	30.12	..	light	..	hazy	—rain
" 25..	6 a. m.	40	29.90	NE by E	moderate	..	rain	
	10	41	29.83	..	fresh	ENE	..	scud from ENE
	2 p. m.	38	29.70	..	..	..	..	
	6	38	29.60	..	strong	..	..	
	10	37	29.58	..	moderate	..	cloudy	—rainy

Average temperature of the week ending Monday, November 25, 38°.28.

METEOROLOGICAL RECORD, KEPT AT AVOYLLE FERRY, RED RIVER, LOU.

For the month of October, 1833—(*Lat.* 31.10 *N.*, *Long.* 91.59 *W. nearly.*)

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Thermometer.*			*Wind.*	*Weather, Remarks, &c.*
1833.	Morn'g.	Noon.	Night.		
Oct'r 1	65	72	68	NW	clear—purple figs fine, gathered the last ripe
" 2	54	72	68	calm	..
" 3	56	78	71	..	.. —Red River rising
" 4	58	75	71	..	..
" 5	62	78	73	S—light	cloudy—evening, shower—from 8 p. m. steady heavy rain all night
" 6	70	76	68	calm	.. —and heavy showers all day
" 7	56	65	62	NE	.. morning—wind from N to NW—evening clear
" 8	48	68	61	calm	clear
" 9	59	72	68	..	.. all day
" 10	56	73	69	..	.. —night cloudy
" 11	60	74	72	S	.. —foggy morning—clear day
" 12	70	74	67	N—high	.. all day—night calm
" 13	52	72	67	calm	..
" 14	59	76	73	S	cloudy—shower at night
" 15	70	80	79	..	.. .. —and sun shine all day—night clear
" 16	76	85	77	..—high	clear—flying clouds—evening showers
" 17	63	70	61	W to NW	cloudy morning—from 10 a. m. clear and high wind
" 18	45	59	55	N	clear—rain at night
" 19	47	57	56	..—light	cloudy
" 20	43	49	44	..—high	clear
" 21	39	50	46	..	.. —white frost light
" 22	33	48	47	..	.. — .. .. severe
" 23	40	65	63	S—light	.. — .. .. light—evening calm and cloudy
" 24	54	75	73	..	.. —evening calm and clear.
" 25	63	70	58	NE	..
" 26	42	68	61	SE—light	..
" 27	47	73	70	calm	..
" 28	50	63	50	N—high	..
" 29	39	54	49	calm	.. —light white frost
" 30	33	64	54	..	.. —severe .. .. —Red River at a stand
" 31	45	67	60	..	.. —light .. ..

Red River is now within 11 feet of high water mark—rose this month, 13 feet 2 inches.

MARRIAGES.

On Wednesday, 27th inst. by the Rev. Dr. Knox, John C. Tillotson, Esq. of Rhinebeck, to Matilda, daughter of the late Wm. Few, Esq. of this city.

On Monday evening, the 25th instant, at Christ Church, by the Rev. Benjamin Holmes, Thomas A. Taggart, Esq., to Susan W. Eakin, daughter of the late Amaziah Dusenberry, of this city.

At South Salem, Westchester county, N. Y., on the 26th instant, Richard M. Hoe, of the house of Robert Hoe & Co., of this city, to Lucy, only daughter of Mr. Josiah Gilbert, of the former place.

DEATHS.

On Friday evening last, Miss Maria Amelia Anabella, eldest daughter of Eustis Prescott, Esq. aged 16.

Last evening, Nov. 29, of consumption, Ira Babbit, a soldier of the Revolution, in the 70th year of his age.

At Alexandria, D. C., on Wednesday, the 6th inst., Robert J. Taylor, in the 19th year of his age.

At Philadelphia, on Friday, the 14th instant, Alexander Henry Weir, in the 19th year of his age.

These youths were both members of the senior class in the College of New Jersey, and had returned in perfect health to their respective homes to spend the fall vacation. By a remarkable providence, they were each brought to the grave by an accidental discharge from a gun. Neither was killed instantly; and for several days after their respective injuries they both appeared to be convalescent, when the symptoms of *tetanus* or lockjaw, appeared. and destroyed the fond hopes previously indulged with respect to their recovery. They were both distinguished for their cheerful and amiable dispositions, possessed of good talents, beloved by their fellow students, and have died lamented by numerous friends and acquaintances.

In Philadelphia, on Thursday of last week, Miss E. Roberdeau, eldest daughter of the late Col. Isaac Roberdeau, of Washington, D. C.

At Buckland, Va. at the seat of Luke Kastaret, Esq., Mrs. Catherine Shannaman, at the advanced age of 110 years. She came to Baltimore from Lancaster, Pa. when there was but three houses in that city, and resided here until the last three years. She retained the faculties of her mind until about a year ago, and her eye-sight until the last moment of her life.

On Monday morning last, at the residence of Mr. Wm. Grantham, of Jefferson county, Va. the Rev. Seely Bunn, of the M. E. Church, in the 64th year of his age. The decease of this venerable and good man was hastened by a severe injury which he sustained by being thrown from his gig on Tuesday, the 12th inst.

At Norwich, (Connecticut,) on the 27th November, Daniel L. Coit, Esq. in the 80th year of his age.

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGECOMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines. and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal. d6

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1½ do. ⅜ do.
800 do. 2 do. ½ do.
600 do. 2¼ do. ½ do.
soon expected.

Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them o73meowr

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
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ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely new: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

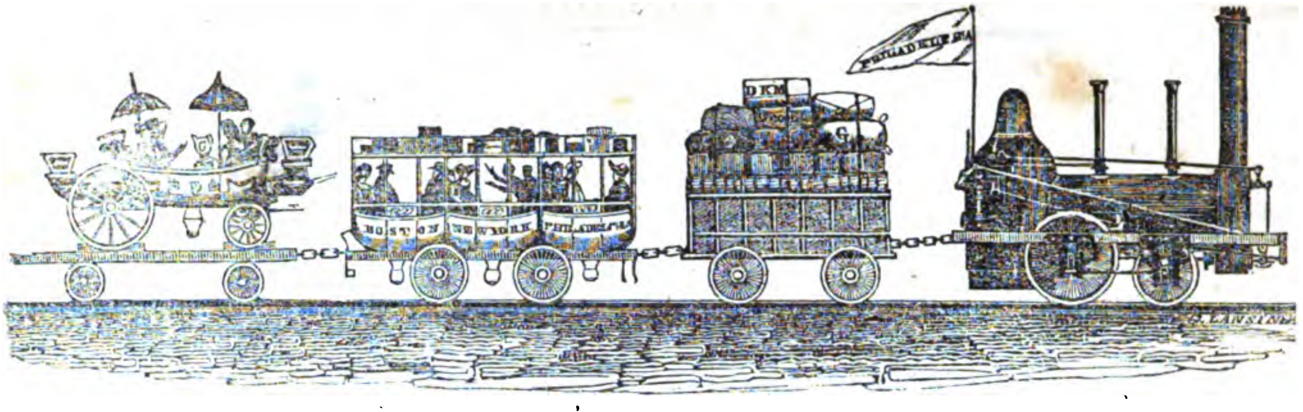
Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, DECEMBER 14, 1833. [VOLUME II.—No. 50.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, DECEMBER 14 1833.

RAILROAD JOURNAL.—Subscribers to the Railroad Journal will please bear in mind that the next, or *fifty-first* number, will not be issued in its regular order, as I am desirous of showing them the work in a *semi-monthly* form, with a cover of colored paper, by which means it can be more readily preserved than in loose sheets. The 51st and 52d numbers, together with an *index and title page*, will be issued on the 27th inst., stitched in a cover, and forwarded to subscribers as usual.

☞ Having heretofore expressed some doubts of the *continuance* of the Railroad Journal, for want of patronage to *pay its expenses* for materials and labor, I *now* have the pleasure of informing those who take an interest in its continuance and success, that *it will be continued*, at least another year.

I have received from a great number of its friends positive assurances of their best exertions to promote its circulation, as well as the continuance of their own support, and, from many others, assurances in the most substantial form, to wit—by subscribing for one or more *additional* setts from its commencement, with *payment in advance for the ensuing year*, thus inducing me to believe that its continuance is considered worth an effort, and at the same time, if all its *present* subscribers shall continue and pay promptly for the ensuing volume, enabling me to continue it in its *present shape and size*.

I now, therefore, repeat that the RAILROAD JOURNAL will be continued. It is necessary, however, for me to say, that payment will be expected in advance, or by the 1st of February—as that, and that only, will enable me to send it to subscribers with such improvements as I hope to be able to make in its appearance.

Those who find it *in*convenient to remit *three* dollars for want of small bills, will be credited with the *full* amount, if they remit *five* dollars *in advance* for the Journal, *subject to postage.*

⁂ Those subscribers *now* indebted for *past* volumes, who do not pay by the first of February, will be charged four dollars per annum.

It is hoped, however, that no person friendly to the Journal, or the cause it advocates, will at that time be in debt to it, as my intention is to publish only enough to supply those who pay for it, and a few surplus copies for binding.

Hereafter the subscriber will be charged with the amount of postage paid by me, unless the letter contains *five* dollars or over; and letters ordering a change of direction of a paper, will *not be attended to*, if they come subject to postage. This measure is adopted, not from a desire to be uncourteous, but to avoid a repetition of what has frequently occurred, probably from thoughtlessness, to wit, having to pay 18 3-4 or 25 cents for the privilege of stopping a Journal *in one place and sending it to another;* and it has occurred, too, in more than *one* instance, where the subscriber had *not paid his subscription.* It will not be so hereafter. If the Journal is worth having, it is worth *paying* for; and if it is a convenience to have its direction changed from one place to another, that convenience is worth the postage of a letter.

Those who hereafter subscribe for the Journal, and wish the back volumes also, can have vols. 1 and 2 in two parts to each volume, with title-page and index to each, stitched in *covers* of colored paper, which can be forwarded by mail, to any part of the country. Price of the *three* volumes, the two first in *covers*, and the third as it shall be published, $10 in advance. Remittances by mail, if enclosed in presence of the postmaster, will be at my risk.

BALTIMORE AND OHIO RAILROAD.—In this number will be found the conclusion of the 7th Annual Report of the President to the Directors of the Baltimore and Ohio Railroad Company. That of the Chief Engineer will follow. A detailed statement of the surveys and estimates for the Baltimore and Washington Railroad is given, which will be found to contain much useful information, or, at least, we believe so, and therefore shall make copious extracts from it hereafter.

UNDULATING RAILWAYS.—In the Journal of the 30th of November will be found an account of Mr. Badnall's *first* experiment, made on the Liverpool and Manchester Railroad, to test his theory of the *undulating* railway. As this is a subject of much importance to railroad companies, as well as one about which much has been said in the Journal, we are gratified with the opportunity of laying before them an account, which will be found at page 769 of his further experiments upon the same road, which have, apparently, fully established the correctness of his theory. We shall endeavor to obtain further information from authentic sources upon the same subject.

We are informed by a letter from a gentleman at York, Upper Canada, that an application for a railroad between Lake Ontario and Lake Erie is now before the legislature of Upper Canada.

SUSPENSION RAILWAY.—We have been asked for a more definite description of the *suspension* railway than has hitherto been given to the public: in reply to which we would observe that a friend, residing in Boston, has promised us a full description, with drawings, which we shall certainly give to our readers at the earliest possible period.

LONG ISLAND RAILROAD COMPANY.—We publish in a following column the proceedings of the convention held at Smithtown on the 3d inst. We are gratified to perceive that the proposed road is exciting much interest in its favor, not only throughout the island, but in New-York. So strongly is the public mind impressed with a belief of the ultimate success of this work, that we are assured the whole amount of the stock would be taken up without the least delay.—[Long Island Farmer.]

LOCOMOTIVE ENGINES ON COMMON ROADS.—Mr. Byington, an ingenious mechanic of Pittsburg, is engaged in the construction of a locomotive steam engine, on an improved plan, and intended to be used on common or turnpike roads. The Pittsburg Statesman says, Mr. B. is confident that he has discovered an improvement by which a locomotive engine may be made to operate on such roads with perfect success. Let us hope that this confidence on the part of the builder is not premature or ill founded. If experience shall justify it, and he succeed in his undertaking, he will prove himself one of the benefactors of the age.—[Baltimore Patriot.]

Seventh Annual Report of the President and Directors to the Stockholders of the Baltimore and Ohio Railroad Company.

(Continued from page 772.)

2. *The Construction of the Lateral Road to Washington.*—At an early period in the existence of the Company, the expediency of a lateral railroad to Washington, in connection with the Baltimore and Ohio Railroad, was suggested and universally admitted. Eight miles of the distance, or one-fifth, and that certainly the most difficult of construction, had already been made in the prosecution of the main stem towards the Ohio, and a level obtained, at the crossing of the Patapsco, which would materially diminish the expense of passing the dividing ridge between the waters of that river and the Patuxent. The arrangements too, in the streets of the city of Baltimore, which were prepared for the accommodation of the main stem, would be equally available for the lateral road; and the experience already obtained by the officers of the Company, would secure the completion of the work upon the best terms, and in the cheapest manner. These reasons pointed to the Baltimore and Ohio Railroad Company, as the proper body to construct the Railroad to Washington, and the profit which it was conceded, on all sides, would result from the work, when completed, induced the Company to undertake it. Application was accordingly made to the Legislature, at December session, 1830, for pecuniary aid, by a subscription to the stock of the Baltimore and Ohio Railroad Company. The subscription was not made, at the time, but the right to make it was reserved by the State. Although the law that was passed on the subject was by no means acceptable, the Company continued the surveys for the road, and obtained an act of Congress authorizing its construction within the District of Columbia. At the session of 1831, of the State legislature, the application of the preceding year was renewed, and the law was modified in many important particulars, but still the option to subscribe to the stock was left to the state, and the uncertainty whether this would be exercised or not, made the law of 1831 but little more acceptable or efficient than that of 1830. The surveys, however, were still continued, the nature of the country between Baltimore and Washington being found to be such as to require very extensive examination, and the most careful comparisons of the various practicable routes, previous to the adoption of any line between the two places.

At the last session of the Legislature, the application of the Company for assistance to construct the Washington road was again made, and with a success that authorised the commencement of the work without further delay. The fare for carrying a person the whole distance between Baltimore and Washington was raised from $1 50, the price in the two preceding laws, to $2 50, subject to such reduction as expediency might require. The state took $500,000 of the stock, upon condition that $1,000,000 should be bona fide subscribed by others, and providing that the whole $1,500,000 should be a separate stock; the Railroad Company to pay to the state, as a bonus, one-fifth of its annual receipts from the conveyance of passengers, besides its proportion of dividends on the stock held by it. Authority was given to the Railroad Company to subscribe to such portion of the stock as might not be taken at the end of thirty days after opening the books, to borrow money to pay the instalments on their stock, and "to pledge the property and funds of the Baltimore and Ohio Railroad Company, with the consent of a majority of the stockholders, in general meeting called for that purpose, and so much of the stock made a separate stock as might be subscribed by the Baltimore and Ohio Railroad Company, as a security for the payment of any and every sum so borrowed, and the interest thereon, provided that the property of the state in said road should, in no event, constitute any part of the pledge above mentioned." Authority was also given to the city of Baltimore, and the Company owning the turnpike road between Washington and Baltimore, to subscribe for a certain amount, if they thought proper, at any time within six months after the passage of the law. The books being opened, stock to the amount of $61,200 was taken by individuals; but the city of Baltimore, and the Turnpike Company, not having subscribed, the question at once arose, whether the road should be abandoned, or the Baltimore and Ohio Railroad Company should take the unsubscribed stock, under the authority granted to them by the act of assembly. To determine this, a meeting of the stockholders was called, upon the 8th day of May, 1833, at which it was determined, by a vote of 25,454 shares to 820 shares, to take the stock, and to make the pledge authorised by the law for the payment of the principal of the sums borrowed for the purpose, and the interest thereon. In consequence of this determination, the board took immediate measures to commence the lateral road, and have effected such pecuniary arrangements with the Union Bank of Maryland as will secure the successful prosecution of the design. The surveys have been completed, and after a most careful and minute examination of the various lines run, the board have adopted a route as far as to the District of Columbia, presenting in no case an elevation of more than 20 feet to the mile, or a curvature of a less radius than 1273 feet, the average radius being about one mile. The bridge over the Patapsco, at the Hockley mills, has been under contract since the beginning of July, and is rapidly progressing; the contractors have also commenced operations on the first division of the road, extending from this bridge to the summit of Merrill's ridge.

The remainder of the road will, in a short time, be let, and the graduation of the whole distance will be prosecuted simultaneously, so as to be completed at the same time with the bridge over the Patapsco. The board feel satisfaction in announcing to the stockholders that the proprietors of the land over which the road will pass, have, very generally, either ceded the right of way gratuitously, or agreed to refer the subject to amicable arbitrament, so that a pregnant source of expense and litigation will in a great degree be avoided.

With the prospect of profit to the stockholders, on the completion of the lateral road, the board have every reason to be satisfied, from the two additional sources of revenue that will then be open. The one, the use of eight miles of the present road for a transportation, which it would otherwise never possess—the other, the dividends on the amount of stock held by the company, as an independent corporation, in the undertaking.

With regard to the resources of the company to meet the interest on the loans made for the lateral road, and the course which has been adopted in relation to it, the board refer to the report of a committee of their body, dated July 12th, heretofore published, and now inserted in the appendix.

3. *The Perfection of Steam Power for the Purposes of Transportation, together with the Subject of Machinery generally.*—In the Sixth Annual Report, the board of directors announced the satisfactory result of the improvements that had been made with the engine of Davis & Gartner, constructed with Cooper's vertical boiler—many further experiments, however, were necessary, and much remained to be done, before the board could feel themselves authorised to order engines upon this plan. The first engine was necessarily an experiment. The exact proportion of the parts could only be determined by constant use—and for some time after the engine commenced running, frequent alterations were found to be necessary to obtain the strength, lightness and compactness, united with general efficiency essential to the success of the machine. This, however, has been finally accomplished, and the board feel satisfied that they have obtained, by the perseverance of those in their employment, an engine better adapted to the purposes of this road than any other yet invented. The engine in question is as manageable as the best English engines, possesses much more power with the same weight, works with equal, or very nearly equal, facility, on a curved and straight road, presents all its parts to the eye of the engineer as he occupies his stand, burns the anthracite coal with great facility and powerful effect, and evaporates more water in a given time, and is liable to far less injury from wear and tear, than any other known engine. The objection against the English engine of the present construction, is, that the tubes of its horizontal boiler are frequently bursting, by which not only is the expense of repairs incurred, but the bursting of a tube at once extinguishes the fire, leaving sometimes the engine and its train in the middle of their journey. In the vertical boiler used by this company, and the right to use which they have purchased from the ingenious inventor, Peter Cooper, Esq. all this is entirely avoided. In the horizontal boiler, the fire is at one end, where of course the greatest quantity of steam is produced, and the density of the water is the least; so that the tubes, where most exposed to the action of the heat, are least protected from it; and the fact is, that the tubes commonly all burst within a few weeks. Various attempts have been made to remedy this by producing a circulation in the water of the boiler, but hitherto it is believed without success. In the vertical boiler, on the contrary, the water on the outside being colder than that which is near to the tubes, descends towards the fire and passes up again in bubbles of steam to the steam chamber, to exert its expansive power in pressing the water of the boiler downwards to the very place where the intense heat of the anthracite coal renders every protection necessary which can be afforded to the bottom of the boiler, and to the tubes. In the upright boiler, therefore, without the intervention of complicated machinery to obtain a circulation, it is produced in the most efficient manner, by simple and natural causes. Some idea may be formed of the value of the vertical boiler, adopted by the board, from the fact, that after twelve months use, with *anthracite coal* for fuel, not one of the tubes of the Atlantic engine has given way, and to all appearance they are now as sound as when first put in. For a further account of the performance and power of this engine, see report of the Chief Engineer, and of the Superintendant of Machinery.

The "Traveller" Engine, which was first put upon the road on the 10th of October, and which, like the Atlantic, has a vertical boiler, fully answers all the anticipations that were entertained of its performance, mentioned in the report of the Chief Engineer. The attaching of the pinion, through which the power is communicated to the wheels, to a separate shaft, has fully answered the purpose of giving steadiness to the machinery, and will no doubt very materially diminish its wear and tear. The "Traveller" is an excellent illustration of the propriety of devoting every attention to the vertical boiler engine, and exhibits numerous points of superior excellence over its predecessor, the Atlantic. When it is considered that the horizontal boiler engine, of England, has been brought to its present excellence, after the experience and experiments afforded by its constant use for a long time; and that it is, as may be safely said, inferior in point of durability, and power to generate steam, to the first attempts with vertical boilers, it is not unreasonable to believe that the latter will supercede all others, and every effort will forthwith be made to put a competent number upon the road.

Besides the improvements in the locomotive engine, others have been made in the machinety used by the company, and particularly in the construction of the wheels of the cars--by which an iron rod is introduced into the rim of the wheel when cast, which not only adds to the hardness of the outer surface, by perfecting the chill, but increases in a great degree the safety of the wheel itself. Improvements have also been made in the burthen cars, tending materially to diminish the wear and tear of them; and with a view to the employment of steam, the passenger cars will hereafter be so constructed as to carry neither passengers nor baggage upon the top—by which a very great saving in the first cost of them will be effected, and the chief cause of injury to them will be avoided. At the same time every attention will be paid in the construction of the cars, to render them, both in winter and summer, comfortable to those that use them. For a more full detail of this department, reference is made to the report of the Chief Engineer, and of the Superintendant of Machinery.

The company having thus, by a series of experiments and gradual improvement in the various machinery and motive power, arrived at a state of information sufficient to become the manufacturers of their own engines, and the board having hitherto been unable to enter into satisfactory contracts for them, they determined to erect upon their own grounds suitable buildings, and provide the requisite means to construct all that they may require, as well as to keep them in a state of repair. By this course, the board have no doubt that a considerable reduction will be effected in the cost of the machinery and moving power.

The board of directors have now gone over those subjects which, at the commencement of the official year, claimed their particular attention; and upon a review of the events of the last twelve months, although they still find themselves pressed by many difficulties, yet they also find much cause for congratulation. A dispute with the Chesapeake and Ohio Canal Company, which, after the decision of the courts, threatened serious injury to this company, has been amicably and happily settled, and a good feeling exists between the two corporations, which, as their interests will hereafter be closely connected, by the extensive advantages they will reciprocally confer upon each other, it is hopedand believed that nothing will occur to disturb. The way to the west through the Valley of Virginia is now open to this company. The Conecocheague offers an easy access far into the interior of Pennsylvania; and the Potomac, when circumstances will admit, is still open as one of the avenues of western intercourse. The construction of the lateral railroad to Washington is secured, together with the advantages that must, in a pecuniary point of view, accrue to the company, from that work, when it becomes the channel of communication, not only between Baltimore and Washington, but between Baltimore and the Chesapeake and Ohie canal, and the country on the borders of the lower Potomac: at the same time improvement has advanced with a steady pace in every department of the company, and upon reference to the report of the Superintendant of Transportation, it will be perceived that there has been a steady and satisfactory augmentation in the revenue of the company, accompanied by a comparatively small increase in the expenses of transportation. In fine, the board of directors see nothing now which can possibly interfere with the early completion of the work, to points where it is believed that every reasonable anticipation of profit and advantage, both to the stockholders and the public, will be fully realized.

For a statement of the receipts and expenditures of the Company during the past year, and for an exhibit of its general fiscal concerns, the board refer to the report of the Treasurer.

On behalf of the Board,

P. E. Thomas, President.

October 7, 1833.

An Investigation of a Formula for calculating the Transfer of Water from one Level to another, by the Lockage of Boats in Canals. By S. C. Walker. [From the Journal of the Franklin Institute.]

The natural tendency of fluids towards a level, or state of equilibrium, renders it easy to transfer water from the summit level to the lowest level, by the simple opening of gates. When there is a scarcity of water in the summit level, the deficiency may be supplied by stationary steam engines, and the loss from evaporation, leakage, and other causes provided for. It is an inquiry of importance whether there may not sometimes be in the circumstances of the country through which canals pass, natural means, of which advantage can be taken to effect a transference of water from the lowest to the summit level. Should such means present themselves, the expediency of using them to effect this transfer, in any proposed canal, would be determined by an estimate of the expense of locks adapted to the purpose, of the time lost by lockage, and the value of the water thus raised to the summit level, or omitted to be drained away.

With these statistics, the present inquiry has no concern, its object being to ascertain whether such transference is possible in any instance, and if so, in what instances, and under what circumstances it is possible.

Make l' = the length, in feet, in the clear of a lock.
l'' = the average length, in feet, of a boat.
w' = the width, in feet, in the clear of a lock.
w'' = the average width, in feet, of a boat.
d' = the difference, in feet, of the levels above and below the lock.
d'' = the average depth, in feet, of the water displaced by the boat going from the upper to the lower level.
d''' = the same for the boat returning from the lower to the upper level.
m = the factor by which a cubic foot of water must be multiplied to obtain its weight in parts of a ton avoirdupois.
Then $m\, l'\, w'\, d'$ = the tons of water required to raise the water in the lock from lower to upper level.
$m\, l''\, w''\, d''$ = the tonnage of the boat descending.
$m\, l''\, w''\, d'''$ = the tonnage of the boat ascending.

In canals where there are no lateral reservoirs,

$m\, l'\, w'\, d'$ = the constant loss of water transferred from upper to lower level by locking a boat in either direction.

$m\, l''\, w''\, d''$ = the tons of water transferred upwards by the descending boat, by virtue of the fixed gates used as fulcra. These tons are first transferred above the upper gates by admission of the boat into the lock, by virtue of the fixedness of the lower gates; the contrary supposition involving the absurdity of maintaining that the lock receives the addition of $m\, l''\, w''\, d''$ tons without raising the level. The same amount $m\, l''\, w''\, d''$ tons is again transferred from the lower level into the lock, by the removal of the boat below the lower gates, by virtue of the fixedness of the upper gates. The contrary supposition involves the absurdity of maintaining that one horse can by his single strength elevate a number of tons, $m\, l''\, w''\, d''$, through a height d'' without any mechanical advantage.

The same reasoning may be applied to the ascending boat.

$m\, l''\, w''\, d'''$ = the tons transferred from the lock to the lower level by admission of the ascending boat, by virtue of the fixedness of the upper gates, and again transferred from the upper level to the lock by removal of the boat upwards, by virtue of the fixedness of the lower gates. The contrary hypothesis involving similar absurdities.

It will now be easy to deduce a formula for expressing the transfer of water by the two operations of locking a boat downwards and upwards, whatever be the load of the boat in either direction.

Make T = the number of tons thus transferred from one level to the other by this double operation, the positive value being upwards from lower to upper level, the negative value downwards from upper to lower level.

$T = m\,(l''\, w''\, d'' - l''\, w''\, d''' - 2\, l'\, w'\, d')$.....(1)
$= m\, \{ l''\, w''\, (d'' - d''') - 2\, l'\, w'\, d' \}$...............(2)

Make p = the factor by which l'' must be multiplied to equal l'.
g = similar factor for w'' to produce w'.

Then $p\, l'' = l'$
$g w'' = w'$

Substituting the values of l' and w' in (2)

$T = m \{ l''\, w''\, (d'' - d''') - 2\, p\, q\, l''\, w''\, d' \}$
$= m\, l''\, w''\, (d'' - d''' - 2 p\, q\, d')$........(3)

In this formula the conditions to be fulfilled in order that T may be positive, in other words that there be a net transfer from the lower to the upper level, is that $d'' > (d''' + 2\, p\, q\, d')$. This is manifestly possible; for by constructing the boat to fit closely to the sides and end of the lock, $2\, p\, q$ may be diminished at pleasure, and d' may be taken of any amount, however small. In practice the natural limit to the smallness of d' depends upon the cost of locks and the value of time lost in lockage through a multiplicity of locks; d''' may be the depth of water displaced by an empty boat, d'' by a loaded boat; in such an instance the above conditions may be verified, even withuot lateral reservoirs for diminishing the loss from difference of level.

The same formula will readily enable us to calculate the transfer of water in those canals whose locks are provided with lateral reservoirs.

Make a = the factor by which the loss $2\, m\, p\, q\, l''\, w''\, d'$ must be multiplied in order to be equal to the diminished loss caused by the use of lateral reservoirs. Then we have

$T = m\, l''\, w''\, (d'' - d''' - 2\, a\, p\, q\, d')$....(4)

Where the condition of a net gain being made by transference from the lower to the upper lovel is $d'' > (d''' + 2\, a\, p\, q\, d'.)$

I am indebted to Mr. Millington of this city for information that a reward of £500 was offered for the invention of a method by which, without any foreign moving force, the loss from lockage in the Regent's canal, London, might be reduced to 0. Such a reduction appears to be impossible in that canal, from the circumstance that the annual average is $d'' < d'''$, and therefore, for a stronger reason, is $d'' < (d''' + 2\, a\, p\, q\, d')$.

The value of the factor a in the canal is $\frac{1}{27}$, and the loss from difference of level is diminished by lateral reservoirs to $\frac{1}{26}$ of that which would otherwise be made.

The formula (4) has been prepared for one lock with two gates, it is obvious that the same holds true of each of the locks of a canal. It is general, and embraces all the varieties of locks.

Make D'' = the annual average of depth of water displaced by descending boat.
D''' = that by ascending boat.
n = the number of passages of boats from summit level to lowest level and back, then, if all the locks are constructed alike,
Make A = the annual amount transferred from one level to the other, positive value upwards.

$A = m\, n\, l''\, w''\, (D'' - D''' - 2\, a\, p\, q\, d')$...........(5)

Where the condition of positive gain is $D'' > (D''' + 2\, a\, p\, q\, d')$.

The same formula will enable us to determine in any proposed canal where D'' is much greater than D''', the smallest number of locks with which a given difference of level $\triangle$ may be overcome consistent with the above condition, viz. that there shall be an andual gain of water transferred from the lowest to the summit level. In this case

$n d' = \triangle$ and $n = \frac{\triangle}{d'}$ Putting $\frac{\triangle}{d'}$ for n in ......(5)

$$A = m\frac{\triangle}{d'} l'' w'' (D'' - D''' - 2\,a\,p\,q\,d') \ldots\ldots\ldots(6)$$

From which n disappears and the condition remains as before

$$D'' > (D''' + 2\ a p q d')$$

Transferring D''' to the other side of the inequality, we have

$$(D'' - D''') > 2\,a\,p\,q\,d' \ldots..(7)$$

Dividing this inequality (7)

$$\frac{D'' - D'''}{2\ a\ p\ q} > d' \ldots\ldots(8)$$

For d' put its value $\frac{\triangle}{n}$

$$\frac{D'' - D'''}{2\ a\ p\ q} \geq \frac{\triangle}{n} \ldots\ldots\ldots.(9)$$

From the inequality (9) it appears that the smallest integer value of n admissible under the above condition, is such that the quotient arising from the division of $\triangle$ by it, must be less than the numerical value of the expression $\frac{D'' - D'''}{2\,a\,p\,q}$, when $a = \frac{1}{20}$ as in the Regent's canal, the inequality (9) becomes

$$\frac{10\,(D'' - D''')}{p\,q} > \frac{\triangle}{n} \ldots..(10)$$

In the Schuylkill we have $D'' > D'''$, because the amount of descending tonnage of anthratic coal far exceeds the amount of ascending tonnage. It is therefore manifest that the condition (8,) or (9,) as well as (10,) is possible in this canal. It is not my object to inquire at present concerning the amount of ascending and descending tonnage, a reference to the statistics of this canal would furnish any one with the means of assigning the value to the first member of these inequalities, and thence to deduce the number of locks required, and the descent of each, subject to the condition that the annual result of lockage on that canal should be a transference of a certain number of tons of water from the tide water of the Schuylkill river to the summit level of the Schuylkill canal.

The above demonstration rests upon the principle of equivalence of action and reaction. In the motion of cars or carriages on roads or railroads, this reaction is not perceptible: the theory of gravitation shows that it exists: let m = the mass transferred on a road; let n = the number of miles on the arc of the earth's circumference through which the car moves; then $m\,n$ = the momentum in this arc of rotation round the earth's axis thus effected by using successive points of this circumference as fixed fulcra; then it is evident that there exists an equivalent motion in the contrary direction of the same arc. This cannot take place among the particles at the earth's surface; accordingly, a motion of the earth's mass takes place, which, resolved in the same arc, is equivalent and contrary. In the motion of boats this reaction takes place immediately and perceptibly by virtue of the same law. If a number of tons of coal be transported on the banks of the Schuylkill canal, an equivalent contrary motion of the earth's mass takes place unperceived; but if the same number of tons of coal be transported in the canal through the same space, then an equal number of tons of water are transferred byreaction through the same space in a contrary direction.

My only aim in the above communication has been to demonstrate a principle first applied to canals by Dr. Dewees, of Pottsville, Pennsylvania, Journal Franklin Institute, vol. xi. p. 111.

Philadelphia, August 21st, 1833.

New-York and Erie Railroad.—At a Convention of Delegates from the counties west of Broome, held in the village of Angelica, on the 4th December, on the subject of the New-York and Erie Railroad, the Hon. John Magee, from Steuben, was called to the chair, and Austin Smith, Esq., of Chautauque, and Lewis Skorke, Esq., of Allegany, were appointed Secretaries.

After the Convention was organised, Anson Gibbs, Esq., of Cattaraugus, stated the object of the meeting, and reported the proceedings of the Convention held in the city of New-York on the 20th ult.

A letter from the President of the Company was then read by Lewis Skorke, Esq. and some appropriate remarks made, whereupon it was

"Resolved, That a committee of seven be appointed to draft resolutions expressive of the sense of this meeting, and that Benj. F. Smead, Anson Gibbs, Lewis Skorke, Andrew C. Hull, John B. Church, William Goff, and Austin Smith, Esqs. constitute said committee."

The committee having retired for a short time, returned with the following resolutions, which were unanimously adopted:

Resolved, That we highly approve of the vigorous and energetic measures taken by the citizens of the city of New-York, in furthering the construction of the New-York and Erie Railroad; and that we will use our greatest exertions to promote an object of such high importance to the southern tier of counties.

Resolved, That the enlightened and liberal views of the inhabitants of the southern tier of counties, manifested by the readiness with which they have already contributed donations to the Company, meet with our most cordial approbation and encourages us to hope that the work so propitiously commenced, will be vigorously prosecuted; and that a sum sufficient to meet, in a great measure, the loss of interest on the capital expended during the construction of the railroad, will be subscribed by the inhabitants along the route. To forward this object, we recommend to all the county and town committees appointed for that purpose, to make the most indefatigable exertions to procure as great an amount of subscriptions as possible, and forward a statement of the same to the President of the Company, early enough to arrive in New-York on the 25th inst., that the Company may be enabled in their application to the Legislature for a subscription to the stock, to present the amount of the donations as an argument of the earnestness and zeal with which so large a portion of the state embarks in the project.

Resolved, That we deem it an object of great importance, that the inhabitants on the proposed route lay aside all sectional feelings in their donations, and adopt that form of subscription which is recommended by the agent of the company, untrammelled by conditions which would be calculated to render their bonds unavailable.

Resolved, That the vast influx of emigration into the southern portion of this state, together with the increased wealth, enterprise, and intelligence, which are its necessary accompaniments, furnish proof of an unequivocal character, that at the earliest period of the completion of the New-York and Erie Railroad, the business and resources which will flow into its channel, will be more than adequate to its capacity, without the least infringement upon the great northern canal or its lateral branches; and that the early opening and late closing of the annual operations of this railroad will have a most important tendency to secure from foreign and rival channels a great portion of the immense western trade, now actually tending to the northern and southern markets.

Resolved, That each county through which the contemplated railroad shall pass, be solicited to send one or more suitable persons to attend the Legislature, for the purpose of obtaining a subscription to the stock of the Company by the State.

Resolved, That the proceedings of this convention be signed by the chairman and secretaries, and published in the several papers in the section of country through which the proposed railway shall pass, and also in the Railroad Journal, published in the city of New-York.

John Magee, Chairman.

Austin Smith,
Lewis Skorke, } Secretaries.

On the Termination of the Stonington and Providence Railroad. By D. To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

Providence, R. I., Nov. 6, 1833.

Sir—I have just observed the very disinterested statement of your correspondent, "More Hereafter," regarding the termination of the Stonington and Providence Railroad, and I cannot help congratulating the Pawtucket Road Corporation on the sagacity they have displayed in their choice of a counsel. When the parties concerned in the location of a road are anxious to obtain the line which shall really best fulfil the intentions and interests of their company as a body, they have generally left the preliminaries to their Engineers, who, not being otherwise than professionally interested, are not likely to be biassed by individual assertions, but as far as their judgment admits, may be presumed likely to select the most advisable route for all parties or at least to furnish the Boards of Committee with information which will very much facilitate a correct conclusion. This, however, can only result when confidence is placed in the members of the engineer corps, and not where it is expected that they shall be controlled or directed, or encumbered, with the gratuitous advice of individuals on the *qui vive* for a speculation—or of a small company, who, under the pretence of the most disinterested patriotism, or the most angelic benevolence, would persuade their townsmen that that route, and that route only, is possible, or tolerable, or expedient, which shall come within the limits of their charter, and thereby enable them to realize a tolerable return by their job, in the assembly. These men profess to have a most brotherly love for all good citizens who may chance to travel in their neighborhood, a most accommodating affection for the different corporations with which they come in contact, an especial watch over the interests of their fellow-citizens, an entire confidence in the committees appointed for the sole purpose of considering the termination spoken of, and with whose deliberations they profess not to meddle. Yet the route they advocate admits of no dispute—it is certainly the most feasible, the most reasonable, the most expedient route; it is the route indeed for which they hold a charter. Ah! I can discern the cloven foot peeping out.

I pretend not in the present stage of the business to say what route may be most advisable, as it is not improbable the best as regards line may not be. The subject is not matured; sufficient data are not collected; the opinions of those to whom it has been entrusted. are not received, and cannot therefore be commented on. It would be impertinent, not to say unreasonable, to offer any remarks under these circumstances, as much as before the progress of a trial where it is not desired to bias the judgment of the Bench. Those who really desire to see the best location adopted, will wait in silence; those who have a sinister purpose to serve, will doubtless contrive to fly their paper kites as usual. Yours, most respectfully,

D.

Mr. Burden's Steamboat.—Yesterday, December 13, this raft, (for at preseot it is nothing else,) made an excursion up the North River as far as Yonkers, between 20 and 21 miles from the foot of Courtland street. In its passage out, in consequence of some parts of the machinery being disarranged, no attempt was made to obtain a greater speed than ordinary steamboats. When at Yonkers, all was ready to put the principle of the movement to the test, and the result was, that in one hour and one minute we arrived at Courtland street. An esteemed correspondent who has had frequent opportunity of witnessing the construction of this boat, has forwarded a description of its formation, and of its probable utility. This description has been submitted to Mr. Burden, who, after making some trivial alterations, has stated that he has no objection that it should be made public—that he considers it a correct one: it is, therefore, subjoined. In onr next we shall give a correct view of the boat, as it can now be seen at the foot of Beech street; and also several diagrams illustrating the construction of its various parts, accompanied with as detailed a description as can be gathered in its present imperfect state. It is evident that it is capable of performing all that its inventor has promised, and its importance to navigation cannot but be obvious to every one. On canals it will be particularly useful, for unlike other steamboats, it causes no swell, which has hitherto been the great objection against introducing steamboats on our canals.

Mr. Burden's Improved Steamboat, By S. Blydenburgh. To the Editor of the American Railroad Journal, and Adv ocate of Internal Improvements.

Lansingburgh, Dec. 7, 1833.

Sir—Your favor of November 12th was handed me about three days since. With respect to Mr. Burden's boat, I received the letter too late to do justice to the subject. The boat lay three miles below Lansingburgh, and the travelling exceedingly bad. I went down yesterday to take the sketch you requested, but before I got there the boat had started and I missed her altogether. This morning she has started for New-York, and you will have an opportunity to got the sketch there.

The great simplicity of the plan of Mr. Burden's boat renders it one of those most useful of all inventions, which make every ingenious man wonder why he never thought of it before. But as I have not the honor of an acquaintance with Mr. B. I can only give you such superficial outlines as I have gathered from observation in passing it, merely to satisfy my own curiosity.

The principle on which the invention is founded consists in placing two hollow parabolic spindles parallel to each other, at sufficient distance to admit a wheel between them, and by connecting them together by strong timbers across the top, both before and aft the wheel, in such manner as not only to give the necessary strength, but also to serve as a foundation whereon to erect the necessary superstructure both for the machinery and for the accommodation of passengers.

In his present boat the spindles or trunks are 300 feet long, and 8 feet diameter in the centre, tapering, of course, in a regular parabolic curve, to a point at each end. They are placed, as above stated, parallel to each other, and I believe 16 feet inside apart in the clear. The wheel between them is about 30 feet diameter, and 15 feet in length. The buckets are so arranged, as to number and situation, as to prevent the jolting motion felt in the other boats as the buckets strike the water.

To ascertain the buoyancy of this boat, or the burthen she will carry, I take the common method to measure a parabolic spindle—thus: $8 \times 8 \times 7854 = 50{\cdot}2656$ superficial contents at centre; $300 \times 8 \div 15 \times 50{\cdot}2656 = 8042{\cdot}4960$ cubic feet, solid contents, say $8042{\cdot}5$ cubic feet; $\times 62 = 49863{\cdot}5$ pounds weight of water displaced by each spindle, equal to 222 tons 12 cwt. Then the two spindles will require 222½ tons, including their own weight, to sink them to their centre; in which case they would only draw 4 feet of water. Allow, then, the boat and machinery to weigh 70 tons, which I think is not below the truth, and allow 500 passengers to weigh 37½ tons, then the boat, machinery, and passengers will weigh 107½, and will require 115* tons more to make it draw 4 feet of water.

If the above calculations be truo, and they cannot be far out of the way, the boat, with any reasonable load, will never draw 4 feet, and seldom so much.

With respect to her speed, the time and room will not admit of mathematical calculations, though they could easily be made; and Mr. B., who appears to me to be a man of scientific as well as practical knowledge, has doubtless made them; but I am confident, from her great length, narrow breadth, and light draught, she will equal in her motion the most sanguine expectations. I am confident, that with a little practice to get her waywise, she will make the trip to New-York and back, allowing a reasonable stop there, not only by sunshine, but an easy day's work.

It has been said she cannot live in rough water. On this point, I have no hesitation in saying that the same weight of materials could not be combined to form a vessel in any other shape with greater, if with equal strength; and one peculiar advantage it possesses over any other steamboat in rough water is, that her whole weight is borne on the outside of her width, while that of other steamboats is in a narrow compass in the middle: when, therefore, the common boat in a rolling sea is liable to overset, or displace her machinery by rolling, and will almost constantly have one wheel out of water, Mr. B.'s boat, standing upon a broad foundation, can roll but little, and the wheel, by being in the middle, will of course maintain an even depth in the water, and the swell not consequently interrupt her speed.

On the whole, from the opinion I entertain of the talents of Mr. Burden, and from what I have seen of his boat, if the invention does not mark a new era in the history of locomotion, as respects rapid and safe travelling, I will willingly submit to be branded as a false prophet.

Yours, respectfully,
S. Blydenburgh.

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* Mr. Burden states that from 180to 200 tons burthen will occasion a draught of 4 feet.

The Undulating Railway.—For the purpose of further testing this important principle, several experiments have been tried since our last publication, of which the subjoined is the result:

It was determined by the engineers who witnessed the last experiments, that another trial should be made to prove the possibility or otherwise of conveying on an undulating line double the load which the engine was capable of drawing, at a like velocity on the horizontal railway.

The only day on which it was thought this ex- was on a Sunday; in consequence of which, periment could safely and satisfactorily be made on Sunday week a train of loaded carriages, weighing 150 tons, exclusive of the two engines which moved them and their tenders, left Manchester for the Sutton inclined plane.

On this occasion it may, in truth, be said that there never was a more friendly assemblage of mechanical men. It is well known to some of our readers that the French Governmont have selected a body of the most eminent engineers in that country to visit England, with a view of acquiring all requisite information preparatory to the construction of the intended French lines of railway. These gentlemen, nine in number, were all present; the English engineers who attended being Mr. Robert Stephenson, senior, the Messrs. Daglish, Mr. Dixon, and Mr. Badnall, in addition to whom were nearly all the practical mechanics connected with the railway, and many others, (among whom was Mr. Case, of Summerhill, and Mr. Garnett, o Manchester,) who felt a deep interest in the result.

The following statement is an undeniable corroboration of the favorable opinion which we have before expressed on this subject.

Mr. Badnall had proposed, as an extreme test of the merits of the undulating principle, that a double load should be attached to the engine, which he was of opinion could be moved with facility, and with one engine on a curve; and it cannot fail to be interesting to the world at large to know that the experiments fully proved that his opinion on this subject was correct. The following explanation will verify our meaning:

Experiment 1. Two engines, the Firefly and the Pluto, brought the whole train of waggons, (the length of the train was about 151 yards,) weighing 150 tons, exclusive of engines and tenders, to a given point at the foot of the Sutton inclined plane, the velocity attained at this point being about 19 miles per hour. The Pluto then left the train and the Firefly ascended with the load 575 yards in 116 seconds; the distance traversed by the two engines to generate the velocity before ascending being at least one mile.

Exp. 2. The power of the Firefly being reversed, the engine and load *descended* 575 *yards* in 74 *seconds*; the velocity attained at the foot of the plane being *far greater* than at the same point when *ascending*.

Exp. 3. The Firefly and Pluto having traversed 1 mile to generate a velocity of 15 miles an hour, and the Pluto then leaving the train, at the foot of the inclined plane, the Firefly and load ascended 315 yards in 90 seconds.

Exp. 4. The Firefly's power being reversed, the whole train descended 315 yards in 65 seconds.

Exp. 5. The same engines and load, working about 1½ miles, attained a velocity of 18 miles an hour; the Pluto left as before, and the Firefly and load rose 457½ yards in 102½ seconds.

Exp. 6. The Firefly and train descended 457½ yards in 80 seconds.

N. B.—On this occasion some delay occurred in reversing the power, which will account for the comparative difference in time.

Exp. 7. The two engines, as before, attained a velocity of 18 *miles* an hour at the foot of the ascent, the Pluto then left the train, and the Firefly shut off her steam, the whole train then rose, *by momentum only*, 332 yards in 70 seconds.

Exp. 8. The train descended (the Firefly working) 323 yards in 66 seconds.

The preceding experiments undoubtedly prove two most important facts, not only that a locomotive engine can convey, on an undulating line, double the load which it is capable of conveying at the same velocity on a level, *but that it can accomplish* this by the employment of *only one half its power*, which last-mentioned fact was decided by the last experiment.

The Board of Examiners, at the head of which was Professor Silliman, appointed to investigate the cause of the destruction of the steamboat New England have reported that the sole cause of the bursting of the boilers was the immense pressure of steam to which they were subjected, through the *negligence* of the Engineer.

Essay on economizing Fuel and Lighting in Private Dwellings. By the Rev. PATRICK BELL. [From the Quarterly Journal of Agriculture.]

I. THE ECONOMY OF FUEL OR HEATING.—Of all the substances now used for fuel, coal, it must be admitted, takes the pre-eminence. It has been divided by Thomson into four species, viz. caking-coal, splint-coal, cherry-coal, and cannel-coal. The first, or caking-coal, is that which abounds in the Newcastle coal field. Its value as a fuel stands very high; and, from experiments, the fact has been ascertained, that in a well constructed furnace, 1·2 lb. of it will raise a cubic foot of water from the temperature of 52° to 212°, the boiling point.

Splint or hard coal is that which is found abundantly in the coal-fields of Glasgow and Ayr. Experiments made upon this coal have shown that 3·13 lb. are required to raise the temperature of a cubic foot of water from 52° to 212°. Its relative value, therefore, as a fuel, compared with Newcastle coal, is the proportion of 1 to 2·6.

Cherry or soft coal is the species that abounds in Fifeshire, (that of Mid and East Lothian being intermediate between the cherry and the splint-coal.) This coal inflames readily, giving out much heat. Its power of heating seems to be about one-third less than caking coal, 1·5 lb. being required to raise a cubic foot of water from the temperature of 52° to 212°.

Cannel-coal is found less or more abundant in most of the coal fields of Scotland, and in some of those of England. During combustion it yields a great deal of light, and its heating power is found to be nearly the same as that of splint.

Wood, which holds the next place to coal as an article of fuel, is subject to great variety in heating power, some species of timber possessing that in a much higher degree than others. Generally speaking, old full grown healthy timber yields most heat, but such timber is of too much value for other purposes to be applied as fuel in this country. The following table is given on the authority of Count Rumford, and others, exhibiting at one view the power of various species of wood in producing heat. The number indicates the quantity of timber in pounds, required to raise the temperature of a cubic foot of water from 52° to 212°.

Lime-tree, 3·10 lb.; beech, 3·16; elm, 3·52; oak chips, 4·20; ash, 3·50; maple, 3·00; service-tree, 3·00; cherry-tree, 3·20; fir, 3·52; poplar, 3·10; hornbeam, 3·37.

The next substance in the order of importance is peat. This fuel varies much in quality, according to the situation in which it is produced. Dr. M'Culloch has divided it into five classes,—Mountain-peat, Marsh-peat, Lake-peat, Forest-peat, and Marine-peat: the names implying the locality of their production. Of these, the Mountain-peat, from its loose spongy texture, is the least productive of heat; and, in all the kinds, the heating power is in the ratio of the density of the mass. From experiments it appears that, on an average, 7·6 lb. are required to raise the temperature of a cubic foot of water from 52° to 212°; but were the peat compressed by a proper machine, there can be no doubt that its heating power would be considerably increased.[*]

Coke and charcoal are substances prepared from any of the preceding, by submitting them to combustion, under circumstances that exclude them either entirely or partially from the access of atmospheric air. The substances thus prepared vary in the same proportion as the originals from which they are prepared; but it has been stated generally, that 1·1 lb. will raise a cubic foot of water from 52° to 212°; of wood-charcoal 1·52 lb., and of the charcoal of peat 3·28 lb., will each produce the same effect.[†]

I have thus endeavored to give a comparative view of the heating power of the different substances now in common use as fuel; but to give a scale of the comparative cost of these is a department of the subject that cannot be entered upon in this paper, seeing that it is loaded with so many contingent and local circumstances. The economist must, therefore, take the data that are here furnished, and laying these to the expense attendant on the procuring of the fuel within his reach, he will draw his conclusions accordingly.

The next point of consideration is the means of applying, with the greatest advantage, the fuel already described, and the means of distributing the heat in our apartments. Three different modes have been adopted,—that of the open fire, the common and the heated air stoves, and also the agency of steam. In the first method, which is the most generally adopted in this country, considerable saving of fuel may be effected by attending to the following remarks. Since the heat that a room receives from an open fire arises chiefly from radiation and reflection, it is important that the position of the grate in which the fuel is burnt be attended to, and of this the position of the covings has a considerable influence. These, when placed at a proper angle, give out a large portion of heat by reflection, in aid of that sent out direct from the front of the fire-place by radiation. The angle that is considered the best for effect is that of 45°. In fixing grates, the less the quantity of solid matter that is used, so much greater will be the heating effect of the fire, as such solid matter serves as a conductor to carry off heat in a direction contrary to what is wanted. The flue also has its share of influence. This ought to be as large as possible, to be regularly formed, free of abrupt turns, and to have a smooth surface; the throat, or lower part, should be somewhat contracted, and the chimney top ought to be sloped upward, or brought to a comparatively thin edge, instead of the level surface too frequently adopted. It has been ascertained by experiment that a well constructed grate will consume about 1 lb. of coal per hour for every three inches of its length,—that is to say, a grate of 15 inches fire-place will burn 5 lbs. of coal per hour.

Heating apartments by means of stoves, though much resorted to on the Continent, has never to any extent been introduced into Britain. In the common stove the heat is procured entirely by radiation from the surface of the stove and flue; but it is found not to afford such a salubrious atmosphere as the open fire, where a constant and rapid current of air is received and passed through the room. *Heated air* stoves have of late years been successfully employed for heating large establishments, as hospitals, churches, &c. In this, the stove is usually at a little distance from the apartments to be heated. A current of air is heated by passing it over a cockle, from which it is carried into flues to the different points where its effects are required. This appears to be an economical method of heating such large establishments, but it seems not so well adapted to ordinary dwelling houses.

The last method of heating apartments, that we have to notice, is by steam. This powerful agent, besides its being so admirably adapted to impel machinery, appears also to be the most economical for the diffusion of heat through a suite of apartments, and has been adopted with perfect success in many of our manufactories. In these, the practice is to carry a system of cast iron pipes through the apartments to be heated. Steam is received into these from a boiler; the metal is heated, and gives it off again by radiation to the apartment. This, though a very effective mode of accomplishing the object in such situations, is yet of a nature not suited to the elegance of modern dwellings, more especially as the open grate forms an ornament of no small importance in our best rooms. Could the prejudice, however, be once overcome, there could be no difficulty of introducing the system of heating by means of steam into all sorts of dwellings, and the following method of arranging the apparatus is submitted.

In the kitchen a boiler of considerable dimensions is to be set in a furnace, with all the requisite appendages of safety-valve, feed-pipe, &c. A large steam pipe passes from the boiler, through the kitchen, and along the passages, branches from which enter every apartment, each provided with a stop-cock, to shut off the supply of steam when requisite. To determine the size of the boiler, we shall take a particular example—a house of 50 feet by 20 feet. To heat this house, the boiler has a capacity of 10 cubic feet, and being of the usual waggon-shape, its dimensions are 3 feet long, 2 feet wide, and 2 feet deep; such a boiler requires a supply of water equal to 4 cubic feet for every 12 hours it is kept boiling, and a bushel of coal is sufficient to keep a constant supply of steam for a day. The same boiler may be made subservient to the ordinary purposes of the kitchen by allowing the steam to pass into a properly constructed vessel. Perhaps the best construction for this is, that the vessel intended to contain the fluid that is to be boiled should be incased within another of the same form, but leaving a space all round the sides and bottom to contain the steam, having a stop-cock to draw off any water that may be condensed during the operation.

Any number of such vessels may be ranged upon a stand, each connected by a branch and stop-cock to a steam-pipe from the boiler, and they may be all made to boil together, or any one or more of them, as may be required. The outer surface of these cooking vessels should be kept bright, in order to prevent the loss of heat by radiation, while the steam-pipes for heating the house should be kept black on the surface, to promote radiation as much as possible. For this reason, pipes of cast iron are better for heating rooms than those of tin plate. With the diameters equal, it has been found that double the length of tin-pipe is required to yield the same quantity of heat that would be derived from cast iron. With cast iron pipes of four inches diameter, a room of ordinary dimensions may be kept at a temperature of 62° with a boiler whose entire capacity is six cubic feet. In constructing an apparatus of this kind, the steam-pipes should be all laid with an inclination towards the boiler, that the condensed steam may run back to the boiler, thereby supplying it with hot instead of cold water, by which a saving of fuel is effected. In this variable climate, especially in winter, much inconvenience is often experienced in the drying operations of the laundry: this might be obviated by applying steam to that purpose, in a room properly fitted up.

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[*] The experiments of Mr. Todd, on the compression of peat-moss, show that the heating power of compressed peat is at least equal to that of common coal, taking weight for weight.

[†] We believe that the charcoal of *compressed* peat has not yet been submitted to the test of experiment. The subject is of some importance; and the individual, who would conduct a series of experiments, to determine its value, would confer a benefit on the country.

II. ECONOMY OF LIGHTING PRIVATE DWELLINGS.—In this branch of the subject I shall pass over the ordinary methods of procuring light from oil, tallow, wax, &c. and consider only the modern improvement of lighting by gas procured from coal—an invention which must be considered amongst the most remarkable discoveries of this discovering age. It is not necessary to go into a historical detail of the steps by which the discovery was effected; our purpose will be better answered by giving an account of a small gas apparatus which was constructed, and has been kept in use for two years, for lighting a small private house in the country, remote from gas works, properly so called.

The first attempt at this apparatus originated in the idea of placing a retort in the kitchen fire. It was soon found that the heat of an ordinary fire is insufficient to decompose the coal in the retort, so as to yield the full quantity of gas that might be expelled from it. It was also found to be very inconvenient in other respects. Recourse was now had to the erection of a small house to contain the whole apparatus. The dimensions of this building were twelve feet long by nine feet wide and nine feet high. Before describing the apparatus it may be well to glance at the principles on which the process of making coal gas depends. It is to be observed that every kind of coal yields gas; but the different kinds yield products which differ widely both in quantity and quality. Cannel coal has been found to yield not only a greater quantity, but also a purer gas, than any of the other species of coal, and, as a matter of course, is always to be preferred when it can be procured. The gas is extracted from the coal by a process of distillation, whereby the volatile parts are driven off in the form of a crude gas, combined with a variety of other substances, the principal of which are tar and water of ammonia. When the gas has left the retort in which the distillation is carried on, it is first freed of the tar and water by condensation in vessels exposed to cold; it is then brought into contact with lime, by which the remaining portions of offensive matter are absorbed: this consists chiefly of sulphur, which, being combined with part of the gas, forms sulphuretted hydrogen, but the lime having a strong affinity for that substance, they combine, and leave the gas in the state of carburetted hydrogen, sufficiently pure for use.

Fig. 1.

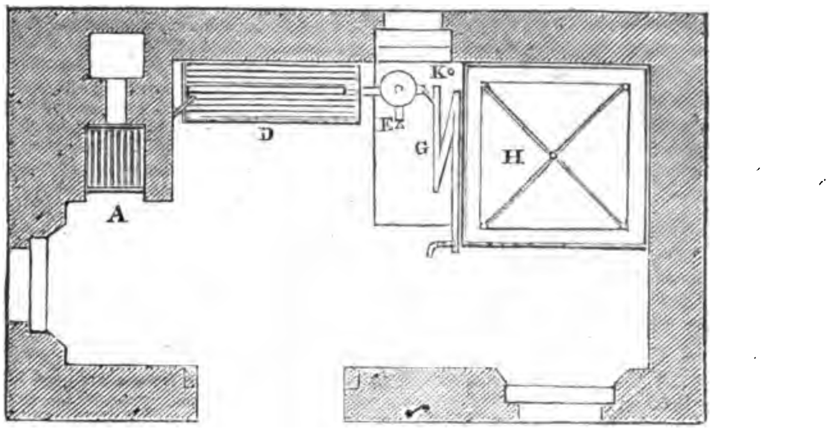
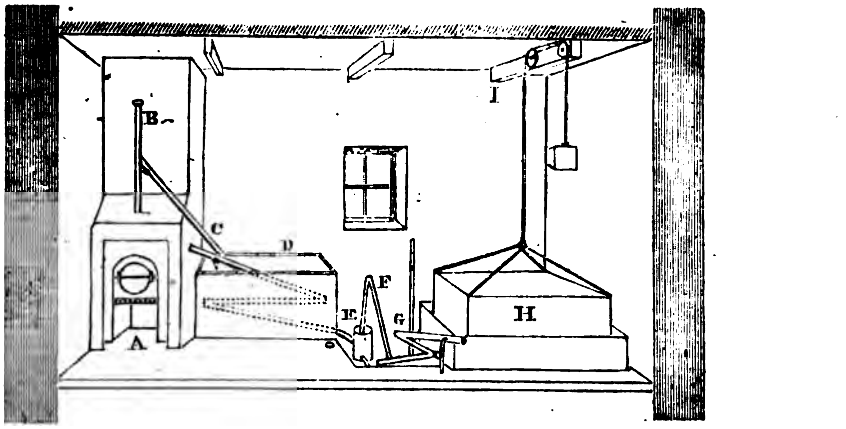


Fig. 2.



The apparatus now to be described is represented in the two annexed cuts. Of these fig. 1 is a ground plan of the house and apparatus, and fig. 2 being a prospective view of the same, in which the front wall of the house is supposed to be removed; the same letters of reference applying to both figures. A is the furnace with the retort; the latter is 15 inches long and 5 inches diameter, of cast iron, and contained a charge of 8 lbs. of coal. To the upper side of the retort, and near its mouth, is joined an iron pipe, B, about one inch in diameter, left open at top, for the purpose of cleaning off the crust of tar that forms on the inside, but while in operation the opening was closed with a wooden plug. The sloping pipe, C, conveys the gas onward to the cooler or condensing vessel, D. This is an oblong trough, which being kept full of cold water, and the pipe which thus conveys the gas being made to traverse the trough in the direction of the dotted lines, having at the same time an inclination towards the tar cistern. This retardation and cooling promotes the deposition of the tar and watery parts, which are borne forward by their own gravity along the slopes of the pipe, while the gas thus separated is pushed onward by the pressure from the retort, until they arrive in the cistern E. The tar and water are deposited in the bottom of this vessel, which is air tight, except by the insertion of the bent pipe F, by which the gas is allowed to pass off towards the purifying vessel. The tar cistern is also furnished with a plug in the bottom, by which the liquids can be drawn off when they accumulate. The purifying vessel G is composed of three inclined pipes, joined as in the figure: these are open at top and bottom, but fitted with plugs for the conveniency of filling and discharging the purifying liquor. This vessel is filled about two-thirds full of slacked lime and water brought to the consistency of thin cream, and the gas being forced through this by the pressure from the retort, it is deprived of the sulphur with which it was combined. The gas now passes through the small pipe connected with the upper end of the purifier, and enters the gasometer H from below. The gasometer is a vessel in which the gas is stored up for use. It consists of two parts, the tank and the gasholder: the tank or lower part is filled with water, and the gasholder, which is an inverted vessel, is a few inches less in diameter than the tank, to give freedom to its motions within the other. The gasholder is suspended by a rope or chain over the pulleys attached to the beam I, and balanced with a weight attached to the rope. The induction pipe, after leaving the purifier, descends, and, entering through the bottom of the tank, rises again in the inside of the gasholder, till its extremity is an inch or two above the surface of the water. The end of the pipe is here furnished with a cup, which constitutes a water valve, allowing the gas to enter, but preventing its return.* The induction-pipe is placed in a manner similar to the last, passing through the bottom of the tank, and rising again on the outside as at K, where it is furnished with a stop-cock, and from this point the branch pipes can be carried to the apartments that are to be lighted.

From the way in which this apparatus was erected, even an approximation cannot be made to the total expense, but, exclusive of the house and the gasometer, the actual outlay amounted only to £2 7s.† The gasholder being a cube of 3 feet, it contains 27 cubic feet of gas, which supplied three single jet burners. The retort was usually charged with eight pounds of coal, and eight pounds more were required for the furnace to work off this charge, which produced 27 cubic feet of gas, at the small cost of three halfpence. This quantity supplied the three burners for a period of six hours, hence the cost of one light for six hours is one halfpenny.

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* In the large gas works this valve is not used in the gasometer, but a more efficient method is adopted to prevent the return of the gas to the retort, by means of what is called the hydraulic main; this is a tubular vessel, placed horizontally, and kept half full of water, the pipes from all the retorts dip into this liquid, and through it the gas is forced by the pressure from the retort, but is effectually prevented from returning by the intervention of the water.

† Equal to $9.75.

From the experience acquired with this simple apparatus, the writer has no hesitation in saying, that a country house, even of ordinary extent, may be conveniently and profitably lighted with coal gas; but he would recommend that the different parts should be substantially constructed, and on a larger scale than is here described.

NOTE.—The apparatus here described is exceedingly simple, and very well adapted for an establishment on a small scale, but it may be proper to remark, that, in extending it, some deviation would be advisable. In the first place, the crude gas should pass the tar-cistern before entering the condenser, and if, as should always be the case, the cistern is placed at a considerable distance from the retorts, a great part of the tar is deposited during its progress thither. * * * * * The gasholder should be always made of sheet iron, and of a cylindrical form.

REPORT OF THE SECRETARY OF WAR.

DEPARMENT OF WAR,
November 29, 1833.

SIR: In submitting to you, agreeably to your instructions, a report of the operations and administration of this department for the past year, it affords me pleasure to bear my testimony to the zeal and ability of the respective officers at the head of the various bureaus, and of those employed to aid them in the performance of the important functions committed to this branch of the Executive Government.

A reference to the accompanying reports and documents will show the state of the army, as well with relation to its numbers, and their position and condition, as to the progress of the various works entrusted to them, and the collection and preservation of the necessary *materiel* for offensive and defensive operations, which is indispensable to the safety of the country. The principle, which governed the reduction of the army from a war to a peace establishment, has been found, by subsequent experience, to be salutary; and its practical operation has been to form a body of officers, equal in all the requisites of military knowledge and efficiency to those of any other service which is known to us. The army is so organized, that, should an increase become necessary, in consequence of those conflicts of interest and opinion to which all nations, in their intercourse with one another, have been exposed, and from which we have no right to expect perpetual exemption, any resonable addition may be made to it without disturbing its arrangement; and the professional knowledge and experience embodied in it, will be immediately felt in the new corps, and will identify them with those previously in service. The military experience of other countries, as well as our own, has shown that the system of extension, by which new and old troops are incorporated together, is much better calculated to produce discipline and subordination, and thus to meet the exigencies of a service, which does not allow large bodies of troops to be kept up in time of peace, than the organization of separate corps, composed of inexperienced officers and men, with all their military knowledge to acquire, and all their military habits to form. And this is more particularly true of the staff department of an army, upon which its movement, its subsistence, and the economy of its administration, must principally depend. The system established in our service is equally creditable to the army and satisfactory to the Government, and may be applied, to any necessary extent, without any diminution of that economy and efficiency which have heretofore marked its operation.

Much advantage is anticipated from the operation of the act passed at the last session of Congress for improving the condition of the army. Already its effects have been felt, as the subjoined documents will show, in the decrease of desertion, and in the increase of the business of recruiting. The addition to the pay of the rank and file, the reduction of the term of service, and the improved condition of the non-commissioned officers, promise important meliorations in the character of the army. This prospect cannot but be interesting to the Government and the country. Although the numerical strength of the army is comparatively small, it is yet sufficient to excite public solicitude; and this must be increased by the consideration, that the character of our military establishment may hereafter essentially depend upon the measures now taken for its moral and intellectual advancement. Although it were idle, in the present state of the country, to apprehend any danger from the force which is employed, still the lessons of experience taught by the progress of events in other nations, ought not to be neglected, nor the possibility overlooked, that other circumstances may lead to the increase of our military strength, and to the diminution of that wise jealousy, which is now one of our national characteristics. Moral habits in the soldiery constitute one of the best safeguards against the abuse of military power, and their inculcation has engaged the attention of this department, during successive periods of its administration. Amongst other measures, which have been adopted with this view, you have recently directed the discontinuance of all parades on Sundays, in order that that day may be exclusively devoted to the purposes of instruction and improvement. Certainly, in time of peace, no just reason can exist for converting a day of rest and devotion into a day of military parade.

The act for the better defence of the frontiers, by raising a regiment of dragoons, is in the process of execution. About six hundred men have been enlisted, and most of the officers appointed, and five of the companies have been ordered to proceed to Fort Gibson, upon the Arkansas, where they will be stationed during the winter. The remainder of the regiment will be concentrated at Jefferson barracks this season, and it is intended in the spring to order the whole to proceed through the extensive Indian regions between the western boundaries of Missouri and Arkansas, and the Rocky mountains. It is deemed indispensable to the peace and security of the frontier, that a respectable force should be displayed in that quarter, and that the wandering and restless tribes, who roam through it, should be impressed with the power of the United States, by the exhibition of a corps so well qualified to excite their respect.—These Indians are beyond the reach of a mere infantry force. Without stationary residences, and possessing an abundant supply of horses, and with habits admirably adapted to their use, they can be held in check only by a similar force, and by its occasional display among them. Almost every year has witnessed some outrage committed by them upon our citizens; and as many of the Indian tribes from the country this side of the Mississippi have removed, and are removing, to that region, we may anticipate their exposure to these predatory incursions, unless vigorous measures are adopted to repel them. We owe protection to the emigrants, and it has been solemnly promised to them; and this duty can only be fulfilled by repressing and punishing every attempt to disturb the general tranquillity. Policy and humanity equally dictate this course, and there is reason to hope that the display of this force will itself render unnecessary its hostile employment. The more barbarous tribes will perceive that their own safety is closely connected with the permanent establishment of pacific relations both with the United States and with the other Indians.

It is due to the regiment of dragoons to remark, that its composition is believed to be good, and, I anticipate, it will do honor to the army, and render effectual service to the country.

I feel it a duty once more to ask your favorable interposition in behalf of the medical corps. There is no portion of the army, whose compensation is so utterly inadequate to their services. The pay of the highest grade but little exceeds that of a captain, and the pay of the lowest that of a first lieutenant; and these two grades constitute the whole range of service within the reach of medical officers. In the line of the army, and most of the staff departments, there are successive gradations of rank, each with increased emolument, to stimulate the exertions, and to reward the services, of the officers. The importance of professional skill and talent in the medical corps, will not be doubted; and the dispersed condition of our army in time of peace, and its exposure to the effects of various climates, render the conservation of its health an object of much solicitude. And in time of war, this solicitude will be increased by the perils of active service.

In order to place in a proper condition this branch of our military establishment, a system of examination has been recently instituted, by which the pretensions of medical gentlemen seeking appointments in the army, will be subjected to rigid scrutiny. A board, composed of able and experienced surgeons, has been organized, and the various members of the department have been examined by them. The result has already been highly useful, and cannot fail to be so in future. But while the standard of professional acquirement is thus increased, justice demands that the rate of compensation should be examined, and that it should be rendered commensurate with the duties and responsibility of this most useful class of officers. It is not to be expected, that the medical corps can retain the able men, who now compose it, or see others join it, unless their services are adequately rewarded.

The act organizing the Subsistence Department expires, by its own limitation, on the 2d day of March next. It was originally passed in 1818, and has been continued by successive temporary acts till the present time. The reason of this course of legislation is undoubtedly to be found in the fact, that the introduction of the system was an experiment, and it was deemed prudent to test its operation, before a permanent character was given to it. This has been fully done, and the result is in every point of view satisfactory. All who were acquainted with the mode of supplying the army previously to, and during the late war, and for a few years after its termination, must be sensible of the superiority of the present plan. In the quality of the provisions, in the certainty of the supply, and in the economy of administration, its operation is decidedly superior to the old system, where contractors furnished and issued all the subsistence required. The continued failures that took place, and frequently in the most critical state of affairs; the controversies arising out of perpetual attempts to issue unsound provisions; and the serious obstacles which these and the other operations of the system interposed to the public service, must be fresh in the recollection of every military man who participated in the events of those periods. The army is now well and promptly supplied, and the faithful officer at the head of the Subsistence Department has established a system of purchasing, of issuing, and of responsibility, which, while it insures this result, guards the public interest against loss and imposition as far as a business necessarily so extended permits. During the fifteen years in which this department has been in operation more than five millions and a half of dollars have been expended under its direction, and the whole loss which has been incurred by the defalcation of its officers, does not amount to 16,000 dollars.

I consider that the time has arrived when the present arrangement should be rendered permanent, and I therefore present the subject with that view to your notice; and I also beg leave to suggest that the compensation of the clerks in the office should be increased. It is now lower than the average amount allowed in other public offices, and less than is due to their labor and responsibility.

The report of the Visiters appointed to examine the Military Academy, shows that the institution is in a prosperous condition, and is fulfilling the duties committed to it, in the education of the young men destined for the military service of the country. The suggestions made by the Visiters, for the improvement of this national school, are the result of a careful examination, and coming, as they do, from a body of able and impartial citizens, are entitled to much consideration. They appear to me just in themselves, and promising, in the event of their adoption salutary consequences to the institution.

There is one subject which I feel particularly desirous of placing before you. The situation of teacher of drawing corresponds neither with the nature and importance of the duties required of that officer, nor with the professional merit of the distinguished artist who has relinquished the fair prospects held out to him in a foreign country, to accept it. The art itself is highly important to military men, and its acquisition is essential to a respectable standing at the academy. It is very desirable that the instructor should unite in his person those high qualifications, natural and acquired, which have in all ages been the lot of those who have attained eminence in the art, and which have placed it among those pursuits that are at once the cause and the effect of advanced improvement in society. I respectfully recommend that this officer be placed in the same situation as the professors at the academy, and I cannot but believe that such a measure would not only be just in itself, but would be a proper tribute of respect to the liberal arts, and a proper notice of one whose professional talents and success have been honorable to this country.

I have had the honor, therefore, to submit to your consideration my views in relation to brevet commissions in the army, and I am induced, as an act of justice to those entitled to them, again to present the subject. If no new legislation is contemplated, nor any action of the Senate which shall change the principle or practice heretofore prevalent, no objections occur to me to delay any longer those promotions. The officers have earned them by length of service agreeably to the established usage; and to make a discrimination, without any previous declaration, so as to exclude from this advantage those who are at this time entitled to it, does not seem called for by the exigency of any circumstance connected with this subject; and, in fact, there are no very obvious reasons occurring to me, why these professional honors which, in common cases, make no demand upon the Treasury, but serve to foster those professional feelings which give elevation to the military character, should not be granted as they have heretofore been. Under ordinary circumstances, they would produce no practical operation, either with relation to emolument or command.—When they should do either, it would be precisely when their value would be enhanced by the very state of things producing this change in their operation; when the greater experience of the brevet officer would entitle him to an enlarged command, and to a corresponding rank over those, whether in the regular army or the militia, whose qualifications, so far as these depend upon service, are less than his.

The attention of the army has been frequently drawn to a project for the establishment of a fund for the support of invalid officers, and of the widows and children of such as may die in the service. The object is a commendable one, and as the only aid expected of the Government is such legislative provision as may be necessary to give effect to the measure, in conformity to the general views of the officers of the army, it is certainly entitled to the favorable regard of the Goverament. A moderate and stated deduction from the pay of each officer would create a fund which would afford essential relief to many who otherwise would be exposed to want and penury, and might soothe the declining years of meritorious officers who may have necessarily expended, in the maintenance of their families, the whole allowance made to them by law, and who, without such an arrangement, would look forward with anxiety to the future. Whatever plan may be ultimately adopted, a legel organization is essential to its operation and success; and as the funds will be provided by the officers themselves, and for their own advantage, the administration will no doubt be committed to them, to be exercised by such persons, and in such manner, as they may direct. The considerations connected with this measure are so obviously just, and in accordance with the dictates of prudence and humanity, that I trust they will be favorably considered.

And I also feel it my duty to bring before you a kindred subject connected with the rank and file of the army, and having for its object a provision for the superannuated soldiers. In our service, as at present organized, a soldier can only be retained as long as his physical powers are sufficient to enable him to perform the duties required of him. When his constitution fails, unless it is the result "of disability, incurred in the line of his duty," he is discharged without any provision for his support, and generally, from the habits of his life, without the disposition, and too often the power, to labor for the means of support. He is then thrown upon the charity of the community, after devoting the best part of his life to the service of his country.

This result may be easily obviated without expense to the Government, and an ample provision made for those discharged soldiers who are unable to procure the means of support The principle which has been long and wisely applied to the navy, may be safely applied to the army. An inconsiderable deduction from the pay of each soldier would go far towards the creation of a fund for this purpose; and if this deduction were to commence with those who might enlist after the passage of the law, there could be no objections on account of the previous engagements formed with the soldiers. And there are three auxiliary sources of revenue which may be applied towards the former object.

These are, fines assessed by courts martial.

The pay due to soldiers who may die without leaving any heirs to claim it.

A proportion of the post fund, which is principally derived from a tax upon sutlers.

It is believed that the means which may be realized agreeably to this suggestion, would be found sufficient to provide for the maintenance of this class of persons, whose condition is now so hopeless, and so unsuited to the character of the Government and the feelings of the community.

The experience of every year adds to the conviction, that the sooner the Indians remaining east of the Mississippi, migtate to the region west of that river, the sooner will they be relieved from the embarrassments of their present position, and placed in a situation where they may physically and morally improve, and look forward to a prosperous and permanent destiny. All the reports which reach the department upon this subject, concur in the representation, that the emigrants already there are comfortable and contented; that the region assigned to them is fertile, salubrious, and as extensive as they and their descendants, for many generations can require. They are making improvements, and erecting dwellings, and are evidently laying the foundation of a social system which, it is to be hoped, will afford them security and prosperity. As a striking proof of their improvement, and of the quantity of provisions raised among them, it may be stated, that one of the contracts for furnishing provisions has been taken by a Choctaw, who is said to have a supply of his own amply sufficient to enable him to meet his engagement. It is fortunate for the Indians themselves, and for the great cause of humanity, that the efforts of the Government to persuade them peaceably and voluntarily to remove, are every year crowned with more and more success. Since the last annual report from this department, the conditional arrangement made by the Seminoles for their emigration, has been rendered absolute by a personal inspection of the country proposed for their residence. They have examined, and are satisfied with it, and if the treaty should be ratified by the Senate, they will soon leave the Territory of Florida. An arrangement has also been made with the separate bands in that territory, by which they have agreed to emigrate, and thus provision has been made for the removal of the whole Indian population from Florida.

The treaty with the Chickasaws has terminated all difficulties with that tribe. It is understood that the exploring party provided for in that instrument are about to commence their journey with a view to select a residence west of the Mississippi. If they succeed, they will remove within the period limited. If they do not, and choose to remain, they will become, with their own consent, citizens of Mississippi, and will occupy, as absolute owners, the several tracts of land assigned to them.

The obligations assumed by the United States in the treaty with the Choctaws, for the removal of those Indians, have been fulfilled. From the reports which have been made to the department, it appears that about fifteen thousand individuals of this tribe have been removed. A party, estimated to contain from fifteen hundred to three thousand persons, have changed their usual place of residence in Alabama, and have declined accompanying the other Indians in their emigration. It is believed that this party is composed principally of the worst portion of the tribe, and that they intend to hang upon the white settlements, in order to indulge the vicious habits they have acquired. As the Government has scrupulously fulfilled its engagements with these people, which terminate this year, and as every exertion has been made by the proper agents to induce them to remove, nothing remains but to leave them to the results of their own experience. It cannot be long before they will feel the necessity of rejoining the great body of the tribe.

Satisfied as you have been, that the very existence of the Creeks in Alabama required their establishment in the country west of the Mississippi, where so many of their tribe already reside, you have not hesitated to embrace every opportunity which offered of accomplishing this object. Instructions have been three times given to ascertain their views, and to endeavor to persuade them to acquiesce in this course. The two first attempts proved unsuccessful, the result of the last is unknown.—Independent of the general reasons arising out of our Indian relations, which operated to induce these efforts, the peculiar state of things among those Indians, and a strong desire to remove the difficulties connected with them, had much influence in directing the negotiations.

The Sacs and Foxes have quietly removed to the region assigned to them, and the Winnebagoes have left the country upon Rock river, agreeably to the stipulations of the treaty with them, and direct across the Mississippi, to their lands north of the Ouisconsin.

Treaties have been formed with the Pottawattamies, Chippewas, and Ottawas, claiming the district on the west side of Lake Michigan, south of Green Bay and north of Chicago, for its cession to the United States and with the Pottawattamies of the peninsula of Michigan for the relinquishment of their reservation south of Grand river.

With the exception, therefore, of the Miamies in the State of Indiana, of a band of the Wyandots at Upper Sandusky, in Ohio, and of scattered portions of the Ottawas and Chippewas in the peninsula of Michigan, north of Grand river and of Saganaw bay, probably not exceeding altogether five thousand individuals, the whole country north of the Ohio, and east of the Mississippi, including the States of Ohio, Indiana and Illinois, and the Territory of Michigan as far as the Fox and Ouisconsin rivers, has been cleared of the embarassments of Indian relations; and the Indians themselves have either already emigrated, or have stipulated to do so within limited periods, and upon such terms as will ensure them adequate subsistence, and the means of establishing themselves comfortably in their new residence, unless, indeed, the aid and efforts of the Government are rendered useless by their habitual indolence and improvidence. The Cherokees occupying portions of land in Georgia, Alabama, North Carolina, and Tennessee, and probably not exceeding eleven thousand persons, are the only Indians south of the Ohio, and east of the Mississippi, with whom an arrangement has not been made, either for emigration, or for a change of political relations.—It is to be regretted that the same causes which have heretofore prevented an ajustment of the difficulties of that tribe, and their removal west, yet continue to defeat the efforts of the Government. These causes are no doubt principally to be traced to the ascendancy of particular individuals, and to their desire to retain political influence and power. It is expected that about five hundred of these Indians will remove west this season, and the residue of the Cherokees, then remaining east of the Mississippi, will be, agreeably to previous computations, about ten thousand five hundred.

The commissioners west of the Mississippi are engaged in the execution of the duties connected with our Indian relations in that quarter. They have succeeded in arranging satisfactorily the disputed question of boundaries between the Creek and Cherokees, which has, for some time, occasioned much embarrassment. They have also formed treaties with the Creeks, the Cherokees, the Senecas and Shawnees, the Quapaws and the Seminoles, of Florida, by which all matters connected with these tribes have been satisfactorily adjusted. Their labors will be now directed to the other subjects indicated in their instructions, and which are important to a permanent arrangement of the various questions arising out of a new state of things which will be created in that region. Among these, one of the most interesting is a practical plan for regulating the intercourse of the various tribes, indigenous and emigrant, one with another, and with the United States, and for the establishment of some general principles by which their own internal government can be safely administered by themselves, and a general superintending authority exercised by the United States, so far as may be necessary to restrain hostilities among them, and incursions into our borders. Until such a system is adopted, it is evident that the condition of those Indians cannot be secure, nor will the obligations imposed upon the Government be fulfilled. The task requires an intimate knowledge of the local circumstances of the tribes of that region and of the country they inhabit, and a practical acquaintance with Indian habits, feelings, and modes of life. I trust the commissioners will be able to report a plan which will fulfil the expectation of those who have observed with solicitude the course of this matter, and which will eventually secure the prosperity of the Indians. As it is probable, however, that this cannot be effected within the time limited for the duties of the commissioners, I would respectfully suggest the propriety of their term of service being prolonged until the close of the next year.

There have been presented for allowance under the pension act of 7th June, 1832, thirty thousand, six hundred claims. The whole of these have been examined, and either admitted, rejected, or returned to the parties for supplementary action. Twenty-three thousand four hundred and thirty-eight certificates have been issued, eleven hundred and eleven claims have been rejected, three hundred returned cases are in the office awaiting or undergoing re-examination, thirteen hundred and fifty-one, which are incomplete in their proofs, are suspended till these are furnished, and four thousand four hundred and twenty-five are in the hands of the parties for additional evidence or authentication, or in *transitu* between them and the office.

It is creditable to the the industry and efficiency of the Pension Office, that such a mass of business should have been performed within the period which has elapsed since the passage of the above law.

I have the honor to be, very respectfully, sir, your obedient servant, LEWIS CASS.

To the President of the United States.

REPORT OF THE SECRETARY OF THE NAVY.

NAVY DEPARTMENT,
November 30*th*, 1833.

To the President of the United States:

SIR: In submitiing to your consideration a review of the operations of the Naval Branch of the public service during the past year, I would first invite your attention to its administration in this place.

The separate organization of the Navy Department, in the manner originally established by Congress, and the change since made by the addition of a Navy Board, have, with the several clerks now allowed, furnished a sufficient number of persons for the suitable discharge of all ordinary duties immediately connected with this office. So far as my knowledge extends, those duties have generally been performed with promptitude and accuracy. But some changes in the present laws respecting them, would probably prove beneficial. Though the number of clerks, and the aggregate amount of salary paid to them are deemed sufficient, yet more substantial justice could be enforced, if that amount were so appropriated as to permit the department to divide it, in conformity to the usefulness of their respective services. It has happened that some of them, receiving large salaries, perform no greater or more difficult duties than those receiving less pay; and no power exists here to equalize their compensation. except by an occasional transfer of duties, not always convenient, appropriate, or useful.

A different arrangement of the Navy Board, has, for a few years, been a subject of consideration by Congress. The board itself, and the head of this department, once united in recommending such a change as to apportion its ordinary business among the several members with a view to greater convenience, despatch, and responsibility. This could be accomplished without any material increase of expense; and it seems on many accounts very desirable. The reasons for the change have been so fully detailed in former reports, as not to need, at this time, further. explanation.

There might be some useful alterations connected with the administration of the naval branch of the service in the office of the Fourth Auditor, whose duties, though nominally belonging to the Treasury Department, are intimately allied with, and very essential in most of, the operations of the navy. The great amount of property, which is in charge of this department, and which is yearly increasing, seems to require that a regular account of it should be opened in that office, and kept in such manner as to insure safety and responsibility. In another particular, improvement could be made. The old balances on his books, due from defaulters who were once in the naval service, are large; and though few such balances have occurred lately, yet the collection of all of them would doubtless be promoted, if it were devolved upon him, as the person who, from his official station, is best acquainted with the situation of the claims, and the means of payment possessed by the debtors, and who could act with most promptitude in securing the public.

Auxiliary to the central administration of the naval service, the inspection of our ordnance was, a few years since, assigned to an officer of rank residing in this neighborhood, and authorized to receive the usual extra allowances while engaged in actual duty. His employment during the past season has been much extended, having embraced the inspection of all our ordnance and ordnance stores in depot of all the naval stations. The result, it is hoped, may prove highly beneficial in our future operations. Under a similar arrangement, the custody and correction, as well as occasionally the purchase of charts, chronometers, compasses, and nautical instruments generally, were devolved on two intelligent officers stationed at this place. The system has worked favorably, and the small increase of expense attending it has been amply repaid in the better preservation and quality of those articles, and in the probable increase of safety to our vessels afloat, and to the lives of their gallant officers and crews. A specific estimate for the purchase and maintenance of a lithographic press is submitted as a means of saving, under charge of these officers, still more to the public in the procurement of charts, circulars, and blank forms, of such kinds as are employed, not only in this office, but at the several yards, and on board vessels in commission. (A.) Its various conveniences and usefulness in other respects, and especially in the drawings and plans connected with the survey of our coast now in progress, are more particularly detailed in the reports annexed. (B. 1 and 2.) To prevent any nominal or real increase of appropriations in consequence of the purchase of this press, it will be seen in the general estimates that a corresponding, or, indeed, a larger reduction has been made in what is asked for the general contingent appropriations for this office, and for the service, and out of which appropriations most of the above articles are now provided.

It was formerly recommended to organize at this place a Naval Medical Bureau, and a bill is now on the files of Congress reported for that purpose. As that bill was not finally disposed of, I did not deem it proper to adopt any different system for attaining, in a different manner, most of the benefits expected to be accomplished by that measure. But if nothing be done during the ensuing session of Congress, regulating this subject, it is intended, under our present laws, that one of the older surgeons, in connexion with other services either at the barracks or navy yard in this city, shall be detailed and employed in performing many of the duties contemplated for a surgeon general.

The whole expenses the past year, for all persons situated here, and belonging to the administration of this department, as well as the expenses for the care and repair of our furniture, buildings, and the grounds appurtenant, were about $48,000. This amount, I trust, will be thought to bear a favorable comparison with the same class of expenses at former periods, or in other similar establishments, when the large increase and extent of duties at this place are duly considered.

Passing from the central administration of this department to that of the persons connected with its operations elsewhere, I would next submit, to your consideration a few remarks on the situation of such of those persons as fill official stations, but are not technically denominated naval officers. They are a large and useful class, belonging to what may be considered our civil list; and consist of agents, storekeepers, constructors, builders, schoolmasters, secretaries to commanders, clerks of yards, engineers, live oak superintendents; and some others attached to stations and hospitals.

In an establishment growing like the navy, in a few years from so small a beginning to its comparatively great size at the close of the late war, and at the present moment, it was perhaps unavoidable that many measures and appointments, considered as incidental to other important objects expressly authorized, should be left to the discretion of the department. In this way, most of the above persons have been employed and paid, usually by virtue of estimates and general appropriations, without any specific provision in any act of Congress regulating the manner of their appointment, or the amount of their compensation. Indeed, a system similar in some respects has been extended to others; as the only limit which now exists to the number of every class of naval officers is the same discretion, restrained solely by estimates and appropriations, and by the confirmation required from the Senate in the case of commissioned officers. These practices have not, in my opinion, been the safest; though the custom of this department to submit to Congress, through the Executive and otherwise, full communications of its doings in relation to most of these subjects, enables the Government to exercise any control deemed necessary over any supposed abuse. My own desire has been, whenever convenient and practicable, to impose still further limits on that discretion. With this view, on a former occasion, the estimates for the contingent appropriations were made by me more specific, and settled rules of allowances and compensation, in most cases, were established or collected, and then digested and published. The revision of our whole naval regulations by the board heretofore appointed for that purpose, will, when finished and adopted, probably introduce greater system and certainty in relation to some of these matters. But it still deserves consideration, whether additional legal provision might not judiciously be made concerning the appointment and wages of some of the classes before named. All the persons on the civil list now under consideration, are believed to have conducted, during the past year, with fidelity to their duties. The only essential changes in relation to them have been the following. There has been a discontinuance of two naval constructors, whose services were no longer needed; and new and more economical arrangements have been made as to the duties of some of our agents and storekeepers abroad.—The few live oak agents, appointed for certain districts, who remained in office last December, have been dispensed with; and no salary is now paying on that account, except to one person, in temporary employ for a few months, in the examination of an unfinished district. In some cases in which we have had warranted officers competent to perform the labors assigned to persons belonging to civil life, and hired at some of the yards, it has been deemed sound economy to order the former upon such duty, and to discontinue the services of the latter.

It has not been found necessary to select a permanent engineer; as the superintendents of the dry docks, and of the erection of the hospitals, have been able for the present to perform such duties as would have been required of him. But the additional schoolmasters authorized at the last session have been employed; and, it is hoped, with increased benefit to the class of younger officers. A general order has recently been issued with a view to improve the education of these officers, by requiring all midshipmen, whether passed or not, after suitable relaxation under leaves of absence, to attend on one of the naval schools for further instruction in the studies, and proficiency in the duties, belonging to their profession. It is intended to employ them not only in appropriate reading, nautical observations, and recitations, but in forming a more practicable acquaintance with the several materials used in the construction and equipment of vessels, and with the manner of preserving them, and of applying them in building and repairs. A due portion of their leisure will also be devoted to the performance of such services connected with our most important naval stations where the schools are established, as will be useful to the public, and at the same time advance them in a more thorough knowledge of the active duties which may soon devolve on them in higher and more responsible situations.

Excepting these variations, the civil establishments at the yards, and abroad, have not been materially altered during the year. It will be seen that the whole expenses of the persons connected with them have been considerably reduced, and are now annually about $130,000. This does not include the wages of ordinary laborers; as these are more properly charged, according to their employment, under other heads, which will hereafter be considered—such, for example, as repairs of vessels, improvements at yards, or building of hospitals.

The only material change proposed in the civil list for the ensuing year, is a small addition to the very low compensation of some of the clerks at a few of the yards,

The remaining persons belonging to the naval establishment are the various officers and seamen of the navy. The general conduct of these the past year has been highly commendable. The very small number of courts martial, it is believed, has arisen from an improving spirit of harmony in the service, and from a mild, but firm and uniform system of discipline. Seldom has the health enjoyed on every station been better; and the superior condition of the medical corps, as well as of the hospitals, exercises on this subject a very salutary influence.

The number of officers in the different classes has generally been kept within the estimates. It is proposed to continue the number much as it now exists. There are now quite as many captains and surgeons as can be usefully employed; the former having been increased about 1-3d, and the latter 1-4th, during the last ten years. There are somewhat more lieutenants and midshipmen than might be deemed indispensable; the former within that time having been increased about one half, and the latter one-fourth: though, in making this comparison, it is proper to state that, previous to 1824, all these classes had occasionally been more numerous than they were at that period. But, in relation to the two last classes, no reduction from the estimates of last year is contemplated. It is considered that, on a peace establishment, they ought to possess ample and valuable materials for any sudden or large increase of the higher classes, which any national emergency may at any time require; whilst nothing is found to prove more injurious to older officers than to be placed in a condition where no further incentives to improvement, by anticipated promotion, exist, and where the classes they already fill contain so large a number as to permit many years to elapse without the possibility of putting them all on active duty, unless at the expense, inconvenience, and injury, of more frequent changes of the superior officers in stations and squadrons, than the public interests appear to justify.

The whole number of naval officers at this time including those under warrants as well as commissions, is about one thousand; and our whole annual expenses, of every kind, for their maintenance, is about $850,000, or an average about $850 for each officer. These expenses have not been increased during the last ten years, except what has been caused by the addition before mentioned to the numbers of some classes of officers, and the augmentation in pay in 1827 to passed midshipmen, in 1828 to surgeons and their assistants, and in 1830 to lieutenants. In the mean time, of late years, more useless officers have been placed on half pay, and some large allowances reduced. But no further essential reductions in these particulars can, in my opinion, be effected without injury either to individual officers, or to the naval service. Whatever has been accomplished by myself on this subject, and on the requirement of a more equal portion of laborious duty from all officers of similar rank and date who were not invalids, has often caused to me much pain; but it has been prompted by a strong sense of the equal justice due to the officers themselves, and of the manifest propriety in this department of seeing that all those under its administration perform services for the public, when practicable, in some degree proportionate to the compensation they receive.

It is hoped that I may not be deemed importunate, if, once more urging on your attention a topic far more grateful to my feelings. I have long entertained a decided opinion that the compensation to some classes of officers ought to be increased. It is certain that more equal justice would be awarded to all. that services at sea could more easily be obtained, that greater cheerfulness and alacrity in the performance of duty would be evinced, and a higher grade of qualifications in some subordinate stations could be commanded, if the whole subject of pay was revised, and the compensation graduated in a fairer proportion among different ranks in the navy, and to similar ranks in the army; and if there was provision made for a larger and marked discrimination between duty afloat and leave of absence, or waiting orders, on shore. Such a discrimination formed a prominent feature in the act of Congress passed April 21st, 1806, and which regulates pay as now established. But that discrimination, amounting to one half of the whole pay, was virtually abolished by a rule of this department in 1819. During the continuance of the small compensation to some classes of officers, and after so long a practice under that rule, with the yearly sanction of Congress by means of the estimates and corresponding appropriations in conformity to the rule, I have not felt at liberty to alter it. Further details on this subject at this time are not deemed necessary, as they have fully and recently been laid before you in a special report from this department on a resolution of the Senate passed at the last session of Congress.

The whole number of seamen in the Navy, including all the different grades, does not vary much from five thousand; and the annual expenses of their pay, rations, and enlistment, are not far from $1,130.000, or, on an average, about $226 for each seaman. These expenses are small, and indicate great popularity in the service when we advert not only to our facility in obtaining good seamen, but to the high rate of wages the past year in merchant vessels, and to the great cost of this class of persons in the navies of some countries, where labor is generally much lower than in the United States. These expenses have not been increased the last ten years, except by an augmentation of about one-third in the whole number of seamen, arising chiefly from an increase of our force in commission. The complement of men to each vessel might advantageously in some respects be lessened, and the whole expenses on account of them be thus reduced, were it not considered of vital importance in so small a navy to have all our ships afloat as perfect as possible in every particular conducive to their efficiency, and to the reputation of the Government. It is expected that a laudable pride will then be felt and encouraged by all connected with the service, on a comparison of the condition of our own ships with those of other nations, and that the moral force of our navy—as a model for a larger one when wanted—as likely to vindicate its country's rights and honor in war, and protect its commerce in peace—will always be much greater with a small number of vessels afloat, built of the best materials and in the best manner, supplied with the most approved equipments, commanded by well educated and well disciplined officers, and navigated by full crews of hardy and contented seamen, with the whole ready on any emergency for immediate and efficient action—than with double the number of vessels half manned, and in other respects defectively provided. Every improvement in our materials, whether timber, cordage, or cannon—in our yards, docks, or harbors—in our hospitals or asylums—will add strength to this moral force, and better prepare us for any future conflict in which the violence or injustice of other nations may involve us.

In connexion with this part of the service, it is deemed proper to present some remarks concerning the condition of the Marine Corps. The subject of its allowances, in addition to pay, was not specially noticed by Congress the last year; though, in that way, it has of late been customary to regulate them. But, under a belief that the omission probably arose from accident, I have not interfered to revise the difficulties which have so long existed under that head. It will, however, be considered my duty, the ensuing year, to investigate, and attempt to adjust them, if not otherwise provided for. The commutation of the whiskey part of the ration, while the marines are at sea, has been extended to this corps; and the army regulation, entirely abolishing that part, has been applied to their rations on shore.

The whole expenses of the corps, independent of the erection of barracks and officers' quarters, are yearly about $190,000. The expenditures for such erections, on an average for the last ten years, have been about $5,000, annually. The quarters authorized at Philadelphia have been completed; but the comfort and proper accommodation of the men require new barracks at New York. The estimates for this purpose, and for the support of this corps, are herewith submitted. (C, 1 & 2.)

The examination of the state of the pensioners upon the Navy Pension Fund, as those enjoying its privileges, have been, or now are, in the service, or were connected with those once in it, may also be deemed to come properly under the head of persons attached to the navy. Though the annual expenditures from that fund are about $33,000, yet the fund itself did not spring from the public Treasury, except as derived from prizes captured by our public vessels. It was not till lately that its disbursements were classed with the navy expenditures; and now the only yearly expense this fund and its administration here impose on the Treasury, is the portion of time they occupy of the head of this department, and of one clerk. Its annual income now exceeds the annual expenses about $20,000, and during the past year, rules have been prepared, and the benefits of this surplus extended, as originally contemplated by the act of Congress creating the fund, so as to embrace those officers and seamen who, without being wounded, have, during long and faithful services, been visited by infirmities entitling them to relief. Five persons, coming under this description, have been added to the pension list, and are allowed suitable clothing, food, and medical attendance. The number of pensioners under this and the other provisions, is 298.

The condition of the privateer pensioners, placed under the exclusive administration of this department, has not essentially changed during the year. The fund for their relief, like that for navy pensioners, does not come from the public Treasury, and its management is no charge upon that Treasury, except in the particulars before mentioned. As the whole of this fund was derived from captures by privateers, it has been deemed expedient to exhaust it in the support of those disabled, and of proper persons connected with those, whose bravery and enterprise made the captures. It has therefore become gradually reduced to $44,667. The annual charge on it at this time is about $3,000, exceeding considerably the annual income, and thus, in due time, carrying into effect the original policy of the system For further particulars about these two funds reference can be had to the annexed statement. (D, 1 to 5.)

On a review of the entire personal branch of our naval establishment, it will be seen that its annual cost, not including the marine corps, is about $2,090,000; and, of that sum, about $1,964,000 is an annual charge on the public Treasury. Considering the size and usefulness of the whole naval establishment, it is believed that this part of it, at the present time, bears a judicious and economical proportion to the whole, except in the particulars heretofore enumerated. Should improvements be made in those particulars, I am satisfied that the number and compensation of the persons employed, both on the civil list and in the navy, will be found to be such as to ensure the due care and preservation of the public property, to furnish officers and men sufficient for the present protection of our commerce and rights abroad, and to maintain among all classes a state of discipline and activity indispensable to efficiency in the discharge of ordinary duties, and to a supply of suitable candidates for promotion in the extraordinary exigencies of the future.

The deaths, dismissions, and resignations, in the service since my last report, may be seen in the tables annexed. (E. F. G.)

When we advert to the other subjects connected with the navy, and more especially to what may be considered as belonging to its materials, it is deemed proper to notice first the employment and condition of our public vessels. Those in commission have consisted of one ship of the line, four frigates, eleven sloops, and seven schooners. They have been distributed, as usual, on four foreign stations, keeping up a greater intercourse than formerly with the western coasts of Portugal and Africa, and with the adjacent islands, extending our cruises into various parts of the Indian ocean, and making the West India squadron act somewhat as a home squadron, by requiring a portion of it to visit twice annually some of our Atlantic ports. By properly regulating these visits, much exposure in the two most dangerous months in a tropical climate is avoided, and great facilities are obtained to furnish necessary supplies, to relieve parts of their crews and exchange officers, as well as to have nearer at hand, during those visits, vessels in commission, which, if any emergency should occur, may be despatched at once on any distant or important service. Efforts have been made to relieve seasonably all our vessels which have been more than two years abroad. The Fairfield and Vincennes have been sent to the Pacific to succeed the Potomac and Falmouth; the Natchez and Ontario, to the Brazilian station in place of the Lexington and Warren; the Experiment to the West Indies in place of the Shark; and the Shark and Delaware to the Mediterranean in place of the Concord, Boston, John Adams, and Brandywine. In making these changes so early as to prevent the expiration abroad of the service of our seamen, much discontent has been avoided, though this system has necessarily subjected the department to some additional expense, by having occasionally, for short periods, double sets of vessels afloat attached to the same station. But it has enabled us to perform our engagements faithfully with their crews, and to keep up a more regular and constant force on each station for protection. At the same time, caution has been taken to guard against an increase of our whole expenditures for the current year beyond the appropriations connected with this subject.

All those squadrons have been actively and efficiently employed; and it gives me great satisfaction to state, that our commerce in all quarters of the globe was probably never known to be more free from menaces, danger, or actual violence.

The estimates for the ensuing year are for the same amount of force as was authorized the past year, consisting of about 530 guns, and distributed in such a proportion among vessels of every class belonging to our service, as to combine the greatest efficiency for naval purposes during peace, with the soundest economy. Few will deem that forse either too large or extravagant, when it is considered that our foreign commerce, exposed on the ocean, exceeds one hundred millions in imports, and almost an equal amount of exports, with vessels exposed in their transportation of over half a million in tonnage, and probably twenty millions in value; and when it is remembered how much the security, not only of those vessels and their cargoes, but of their numerous crews, and of other classes of our citizens resident in some countries abroad, depends on our navy being actively and widely distributed. On this point it ma be well to reflect farther, how safely that navy enables us not only to send to new and the most distant markets, and thus to give increased value to the surplus proceeds of our agriculture, manufactories, and fisheries, and to obtain in return whatever may conduce to comfort, improvement or wealth, but what protection and enhanced worth it confers on most of our immense coasting trade; how much our national reputation abroad is everywhere known and appreciated by it; the respect it inspires, the security it yields, and the weight it affords in all our claims of justice, and negotiations with semi-barbarous nations; and how justly it may be apprehended that new perils will, ere long, await a portion of our trade, and the tranquillity of a part of our maritime frontier, from the operations of a new course of legislation by some foreign powers concerning an unfortunate portion of their population; and against which perils, as well as against the ordinary aggressions and piracies in peace, and much of the depredations which may threaten us in war, the navy, from the insular situation of our country as to most of the world, must always be regarded as our great safeguard.

The facilities for examining and repairing of our vessels have been much increased the past year by the completion, in most respects, of the two dry docks, and the expenses in refitting the classes of larger vessels will thereby become sensibly reduced.

The present policy of this department is to launch no more vessels of the same size with those in ordinary, until the latter are worn out. But it is proposed to build from time to time, and protect on the stocks till wanted, such new vessels as Congress may authorize to be constructed; because, in that condition, their timber will improve rather than decay, and the expense of taking care of them will be trifling compared with that of vessels in ordinary. This course has been adopted the past year with the Macedonian, now building. It is recommended, as sound policy, that authority should be given to procure the frame for another sloop, to be called the Levant, after the consort so gallantly captured with the Cyane ; and the frame for another frigate, to be called the Paul Jones, in grateful memory of one of the earliest, bravest, and most distinguished commanders in our naval service during the revolution. The estimates for the purchase of those are submitted. (H.) Frames could not be bought for vessels of these names under any existing laws ; and the timber, if procured and seasoned, whether soon set up or not, would become more valuable, being sheltered under either our present excellent sheds or ship-houses, and live oak, probably becoming scarcer and dearer as our southern frontier is cleared for cultivation.

The vessels in ordinary and on the stocks, as well as the frames for others in depôt, have all been examined, and found to be in a good state of preservation, except a few of those in ordinary. Some of them are defective by their long continuance afloat before being covered, some by their great age, and some by the original imperfection of their timber. Those unworthy of being refitted are used at times for receiving ships; and the rest, as wanted, are placed in proper state to go into commission for the relief of other vessels returning from long cruises, and needing extensive repairs. As vessels afloat grow older, their repairs must of necessity become more expensive. The cost of all repairs of all our vessels the past year has been about $580,000. During the last ten years, the repairs have been, on an average, about $500,000 annually

A table showing the vessels in commission, with their commanders and stations, is submitted. (1.) The names and condition of those in ordinary and on the stocks, may be seen in the documents annexed (K, 1 and 2). Proceeding from the vessels to the materials used in their construction and equipment, not much has occurred the past year deserving notice. Some additions of valuable and durable articles have been made to our various stores on hand at the time of my last annual report. All these stores, and especially the timber in the docks and under sheds, are in good condition; and means have been taken to ascertain and supply any deficiency, in any article not perishable, which may be wanted for the building and perfect equipment of every vessel on the stocks, and every frame in depôt. As more timber may be needed, or thought proper to be purchased in advance, our means for the supply of live oak, it being the most important species, have been fully investigated and discussed in a special report to Congress from this department during the last session. Referring to that for detailed information on this point, I would only add, that subsequent examinations in some of the then unfinished districts have fully confirmed the impressions entertained concerning the great quantity of live oak timber on portions of the public lands in those districts. In respect to the other kinds of timber needed in ship building, the Government has made little public provision ; and doubts exist whether it will be necessary to make any further public provision for its growth or preservation while the prices continue so moderate, and the resources of the country in such timber are likely, for many years, to remain so very abundant.

The erection of two new magazines, where none before existed, is proposed the next season ; and an estimate for that purpose is submitted. (L.) Connected with this, a thorough inspection has been made not only of our present ordnance stores, but, as previously mentioned, of all our arms on hand, with a view to the sale of such as is defective or unsuitable, and to the procurement of what may be found necessary to produce uniformity, and the greatest power, in our future armaments. The usual sum of about $10,000 has been expended for the purchase of such ordnance and ordnance stores as the current wants of the service required. The buying and manufacture of iron tanks for all our vessels in commission are in rapid progress under the late appropriation for that purpose ; and should Congress sanction the making of our own cordage as heretofore asked, and as now again proposed in the general estimates, the equipment of our vessels would soon become, throughout, all which the friends of the service could desire, for health, safety, efficiency, and national reputation.

After much deliberation, the department has become convinced that the building or purchase of two store-ships for the Pacific station, to be used in the transportation and the preservation there of supplies of all kinds, would promote sound economy, and increase the comforts of our seamen. An estimate for the procurement of one the ensuing year is submitted. (M.) We are obliged to pay freight for these supplies, heavy duties either on their being landed or re-shipped, and large rent for store-houses. The duties are a burden from which we are almost entirely exonerated under similar circumstances in other quarters of the world. The proposed measure would relieve us from them as well as the other charges; and the store-ships, by going out and returning separately and alternately, would afford great facilities to exchange or bring home invalid officers and seamen, without incurring the expense of their passages in merchant vessels from so distant a station.

The construction of two or three small steam batteries, for reasons heretofore recommended, is still deemed highly important to our future interests ; and too long delay in making further experiments, and in acquiring further science on this subject in our naval service, may, on the sudden occurrence of hostilities, place us in a position not a little mortifying to our pride, and hazardous to our welfare.

The different navy yards are essential portions of our naval establishment, connected with its materials. The condition of most of them has been improved the past year either by new buildings for officers' quarters, or new store-houses and timber sheds, or new wharves and other conveniences

The two dry docks at the yards near Norfolk and Boston, having been successfully completed in all essential particulars, the details on that subject will be found in the report annexed, (N, 1, 2, and 3.) This report shows the whole expenditures the last year not only on that subject, but on all others, under the head of gradual improvement. From the great advantages already realized in the ease and rapidity of repairs in vessels at the yards where these dry docks are situated, I am satisfied that others would be found very beneficial. Surveys were formerly had for two more—one at New-York, and one at Portsmouth—and a report in favor of those two was once made and approved in the House of Representatives. Much can be urged in favor of the former place on account of its central position, and great resources for repairs, stores, seamen, and workmen; and of the latter place, on account of the low price of labor, small cost of constructing a dock, and the easy access to it by vessels of all classes at all seasons of the year. But whether one or both, or neither, shall be selected at this time, is submitted to the proper authorities on a review of the whole subject. It must be obvious that the relative importance of different stations must undergo changes, as the capacities of different quarters of the country becomes more fully developed ; and that some places, now employed as naval depôts, can be of very little use on the occurrence of war, while the position of others, when that event may happen, will greatly increase their usefulness.

Among the new places which, on such occasion, if not earlier, the interests of the country may require the Government to occupy for naval purposes, will undoubtedly be Newport harbor on the north, and one or more positions on the long range of coast to the South between Norfolk and Pensacola. Whether the last selection should be made near Charleston or Savannah, at Key West or the Dry Tortugas—each of which possesses advantages for such purposes—can be better decided when the time and circumstances occur rendering immediate action necessary.

The continuance of Pensacola as a naval station seems to me judicious. This opinion arises not only from its convenient position as to the whole Gulf of Mexico, but its proximity to the mouths of the Mississippi, and Mobile rivers, whose great and growing commerce is so amply entitled to the best protection. In the depth and size of its bay, in the excellent defences of its mouth, in its healthy situation, in its easy access to all our vessels, except of the two highest classes, Pensacola has no prominent rival in that neighborhood. The correspondence and documents annexed (O, 1 and 2) are submitted to aid yourself and Congress to judge of the practicability and propriety of deepening the entrance of the bay, so as to admit vessels of the largest class. This, it is supposed, can be effected at a small expense, compared with the importance of such a measure to the full operations of our navy on that coast, and to the greater security and strength of our southern maritime defences.

The exchange of lands at the yard near New York, authorized at the last session of Congress, has been carried into effect. The controverted claim of the heirs of Mr. Harris to a part of the navy yard near Boston, has once been laid before Congress ; and a new action having been instituted by them against the commander of that station, as will be seen by the letter annexed, such course will be pursuep in its defence as Congress may be pleased to direct. (P.)

Some new pretensions have been set up to different parcels of land included in our possession and purchases at Norfolk ; but their justice cannot be recognized on the facts known to the department, and those making them have been informed that no steps can be taken for their adjustment, unless, the parties previously obtain the sanction of Congress, or a judgment in their favor by the courts of law.

The expenditures on all the yards the last year, exclusive of the dry docks, but including houses, sheds, stores, wharves, enclosures, workshops, marine barracks, and incidental labor, have been about $360,000. The expenditures on the dry docks are chargeable to a distinct appropriation for gradual improvement, and were about $180,000. The other expenditures under the last head were about one hundred and fifty thousand dollars. (N, 1.) The estimates for the usual objects at the yards the ensuing year are about the average amount for the last two years. Besides those objects, they include an extra sum towards the erection of rope-walks, in conformity with the plan adopted by Congress in 1827; and yet the whole amount requested towards these and all other improvements, at all the yards, is only $354,000.

Immediately connected with the subject of our yards, is that of our naval hospitals, and naval asylum. Under the appropriations lately made by Congress, new hospitals have been commenced near Pensacola, New York, and Boston, on retired and healthy sites, combining great convenience and beauty. The plans of these have been formed on a scale suited only to the present wants of the service, but capable of easy and appropriate enlargement hereafter, whenever our necessities may require it. An additional sum will be needed to finish them in the manner proposed, and to make further progress in the hospital before built at Norfolk. (Q)

Such expenditures have been made the past year on the latter, from the general hospital fund, as could well be spared, and as the comforts of its inmates seemed most urgently to demand. This is much larger than our present necessities require ; and, therefore, it is not proposed to finish the whole interior of it. But the exterior of this hospital is now chiefly completed, and it has become one of the most beautiful and useful public buildings belonging to the Government. The naval asylum at Philadelphia has been finished and partly furnished ; but it is much regretted that the department has not been able to obtain a cession of jurisdiction over it, without reservations that render the cession wholly nugatory. Besides retaining the usual power in the State to execute criminal and civil process, the reservations subject it to, and it is actually burthened by, the assessment of large taxes which are paid from the hard earnings of our seamen, and an unlimited right is retained to cut up the property by new streets.—Further efforts are now making by the department to obtain relief from these onerous taxes and liabilities, so disadvantageous, if not fatal, to the success of this public and charitable institution. Should these efforts fail, all the correspondence and documents in the case will be submitted, in order that such legislation may be had as the whole circumstances connected with the subject shall be thought to require. The general condition of the hospital fund may be seen in the statement before referred to. (D. 6.)

The ordinary purchases of medicines and surgical instruments for use in hospitals and yards, and in vessels afloat, are included under a specific appropriation, and are about $35,000 yearly. The pay and subsistence of the surgeons and assistant surgeons attached to the hospitals are provided for under the general appropriation for navy officers. The other annual expenses of our hospital establishment, independent of buildings, furniture, and repairs, are about $1,000. These are defrayed wholly from assessments on the seamen and officers. From the same quarter come all other resources for the establishment, with the exception of such appropriations as Congress have made from time to time to aid in erecting and furnishing buildings. These last appropriations have been made but seldom, and have, within ten years, amounted to a sum which would be, on an average, about $22,150 annually ; and for the same purposes, during that period, the fund has furnished, from its annual increase and former accumulations, about forty two thousand annually. Should Congress grant what is now asked, more will probably not be wanted for many years. In immediate connexion with the yards hospitals, and other real estate belonging to our naval establishment, is the live oak plantation. Being situated only seven miles from our most southern yard, it has the past year been placed under the same general superintendence. The purchase of he land, and the cutting and removal of the underwood and common timber for about 200 acres of the plantation had been accomplished before the charge of this department was placed in my hands. It seemed to me judicious in that state of things to atattempt to preserve any benefits already attained, or fairly anticipated, by continuing to destroy a few years longer the annual growth of other wood injurious to the young live oak trees, to trim and train the thriftiest new ones appearing, and to employ merely the leisure of the hands so engaged in extending this process to more of the land. From 200 acres of land, and 22,000 live oak trees to which, in 1829, the above system had been applied, it has, since 1831, been so continued and extended, that the nursery has become enlarged to 225 acres, and includes over 60,000 trees. The expense attending this has been about $1,200 a year: but should any considerable portion of the trees ever reach maturity, and attain a size suitable for ship building, the Government will be amply repaid. As the trees grew larger, the annual expense concerning the same number will rapidly diminish. Doubts exist whether some of them, from the poverty of the soil, and their apparently dwarfish character, will ever attain a valuable size. But it is now too early for forming a decisive opinion on the extent to which the operation of these causes may affect the whole plantation, and, under existing circumstances, sound policy appears to require that the experiment, having gone so far, should be allowed a further and full trial. The nearness of the plantation to the Pensacola yard and to water transportation, enhances much the value of any timber it may produce. Lately, I have not only placed this land under the general superintendence of the commander of that yard, but required his particular and constant vigilance over the live oak reservations in all that region of country. The whole agencies heretofore connected with our live oak, have, as before suggested, been discontinued; all the districts, except small portions of two, having been explored as fully as is deemed useful till the surveys of the land inte townships and sections shall be completed. As fast as they may be completed, arrangements have been made for additional reservations of public land on which live oak has been ascertained to abound, and the prospect of a sufficient supply of that kind of timber in future is flattering, if that on private lands, as these are wanted to be cleared for cultivation, be from time to time purchased at moderate prices, and placed in depôt for the frames of vessels specially authorized or collected under the head of gradual improvement. On the whole subject I have so recently, and at such length, submitted to Congress the views of this department, that further observations here are not deemed necessary. (See report on live oak to House of Representatives, December 14, 1832.)

Some miscellaneous matters connected with the navy deserve a brief notice. The usual attention has been bestowed on the suppression of the slave trade. The colony of Liberia has been visited by the schooner Porpoise while in pursuit of a piratical vessel, and which vessel, it is gratifying to add, is supposed to have been since captured by a British brig, and her criminal career terminated near the island of St. Thomas, on the coast of Africa. One half of the usual appropriation on the subject of the slave trade will probably be sufficient for the ensuing year, as may be seen by the state of the account herewith submitted. (R).

The renewal of an appropriation for the relief of Alexander Claxton, made in May, 1830, has become necessary, in consequence of its having been transferred to the surplus fund before all the persons entitled to it were able to procure the necessary vouchers.

The proceedings of the board appointed, under a resolution of Congress, to revise the naval regulations, will be soon remitted in a separate report.

The survey of our sea coast having been placed in charge of the Treasury Department, it is not in my power, officially, to state its progress; but officers have been detailed, and all available facilities provided, whenever the wishes of those superintending the subject have been communicated.

Some expenses, under the contingent appropriation for enumerated objects, have not been included under any of the amounts already mentioned, but they belong to courts martial, to pilotage of vessels, to transportation of materials, to the purchase of charts and books, and various other small items, forming an aggregate of about $80,000.

On a review of the whole affairs of this department it appears that its expenditures on all naval subjects, the past year, have been somewhat less than four millions of dollars. It will be seen how this result compares with former periods, by adverting to the fact that, during the last twenty years, these expenditures, except during five years of that time, have never fallen so low as three millions; and, except during six years of that time, have never exceeded four millions.

The whole estimates made the past year, for the general wants of what is technically considered the navy, were only $3,176,766. Those for the year previous were $3,227,383. Those for the present year are $3,292,224, (S, 1 to 8.) But it is to be remembered that, under the head of naval expenditures, besides what is paid from the amount voted on the annual naval estimates, it is customary to class what is paid from half a million appropiated for a term of years to gradual improvement almost $200 000 for the marine corps; the payments from the navy pension, hospital, and privateer pension funds, and several miscellaneous sums voted by Congress on motions, resolutions, and petitions; and part of which sums, though charged under this head, have little or no concern with our naval establishment. On the contrary, some of the expenses connected with the administration of the department, at this place, are included in the general appropriation bills for the support of Government, and are not usually classed under the head of naval expenditures.

It is a high gratification to be able to state that, since 1827, nearly half a million a year has been disbursed for gradual improvement; that within ten years a larger number than formerly of seamen and officers, with increased pay to four classes of the latter, have been maintained; very great and valuable improvements, besides the dry docks, have been begun and accomplished at many of the yards, and our force in commission considerably augmented; and yet that all our ordinary naval expenditures are, and probably can be kept, within four million of dollars annually.

The smaller appropriations originally made for the navy served to maintain the few officers and seamen then employed, and supplied us with several fine vessels, four of which are still in existence. The subsequent appropriations on a more extended scale, besides supporting the current expenses of our force in its infancy, furnished the purchase money for most of our present yards, and defrayed the expenses of brilliant hostilities with France, and afterwards with Tripoli; till a few years of comparative inactivity having ensued, the commencement and progress of the last war with England led to a great addition to the naval establishment, and to expenditures much larger than at present. The liberal appropriations that were continued for some years after that war, aided in laying a good foundation for the gradual increase of the navy, and helped to build not only many of the vessels now in commission and ordinary, but most of those upon the stocks. The appropriations for some years past have been similar in amount, and have enabled the department to enlarge its policy, and widen the sphere of its operations.—Besides building some additional vessels, and defraying all the current expenses of an increased force both personal and material, it has been able to erect hospitals to construct dry docks, to improve, greatly, the old yards, to add and maintains a new one on our southern frontier, and to collect in depot a large amount of valuable stores as a part of the due preparation in peace for the various contingencies of war. With a careful regard to system and economy, and with strict accountability in agents and officers, this policy can long be pursued and extended without making the ordinary annual demands for this branch of the service often exceed four millions; and if, without essential changes by Congress, increasing our present expenses, and without any unforeseen and extraordinary wants, our fiscal operations can usually be confined within that amount yearly, it is confidently hoped the naval establishment will not be considered wasteful or burdensome beyond its benefits to the country.

In disbursing between three and four millions the past year, it is not known that a single instance of any loss has occurred.

The balances on hand, unexpended, are about $1,000,000; but most of them will probably be wanted to close the different accounts, on all the different subjects, when finally adjusted.

Connected with our financial concerns, is one other circumstance of urgent importance. The period of time at which the annual appropriations for this branch of the service are usually made, is a source of great inconvenience and injury.

The estimates and appropriations are known generally not to extend beyond the current year. Consequently, it happens that, after the 1st of January, there is nothing on hand under some heads to meet the daily demands of the service, amounting, on an average, to $10,000 per day, unless a new appropriation has been made, or there happen to be some balances of the former year not called for. Under some heads, such balances always exist, because some disbursements, by means of absence, distance, and other causes, are not completed within the year. But they seldom exist under other important heads; and ought not to, if the accounts are seasonably settled, and the estimates were accurate, and the appropriations, as is usual, conformed to the estimates. The power now vested in the President to transfer a balance from one portion to another, is confined to certain classes of claims small in amount; as to all others, no transfer can legally be made, and if no balance remain at the end of the year, and the new naval appropriation bills have not passed, payment is entirely stopped, or the whole operations of this department dependant on them are suspended. Considering how large a part of these operations, and of our expenditures, necessarily takes place in distant quarters of the world, it will be seen that the embarrassment in this branch of the service must often be peculiar and aggravated. In the case of bills of exchange drawn abroad, chargeable to appropriations already exhausted, the public faith, under the above circumstances, is sometimes in danger of being violated; our credit in foreign countries becomes injured: and the Treasury, as actually happened during the last winter, is exposed to large losses if the holders choose to resort to protests and claims for the mercantile rate of damages.

Under the present system of passing so late the naval appropriation bills, it happens that, unless money voted under one head is, without authority, as was once the practice, applied under other heads, this unfortunate condition continues every short session of Congress about two months, and every long session about four months. It can easily be remedied by two methods: One of them is, to make, previous to the 1st of January, new appropriations for a quarter or half of the year towards all permanent objects. By limiting them to such a time, and to such objects, and by taking the estimates of the former year as a guide, no inconvenience will interpose, and no error can occur which may not be readily corrected when the residue of the appropriations for the whole year is voted at a later period in the session. Another mode is, to authorize the President to make necessary transfers from one head to another in all cases where the new naval appropriation bill do not pass by the commencement of the year, and to require from him a report to Congress of the amount and causes of such transfers. If the authority be thus restricted, it is difficult to discover any danger likely to result from its exercise; and it is believed that the surplus of balances on hand under some of the appropriations would usualy prove sufficient to supply the wants under others. The detail and earnestness with which legislation on this subject is now urged, must find their excuse in my strong conviction that no measure whatever, requiring like this no increased expenditures could be more conducive to the reputation and efficient operations of our naval establishment.

Thus, sir, under an examination of its central administration, of its personal, or civil and navy list, of its materials, with its appurtenants thereto, and of its miscellaneous concerns, I have submitted a review of all its transactions and expenditures during the past year that possess any great degree of importance. This has been accompanied by suggestions for such improvements as observation and reflection have convinced me might be useful; and should they meet with the approbation of yourself and Congress, I look forward with confidence to a long continuance of prosperity in the affairs connected with this department.

With great respect, yours, &c.,
LEVI WOODBURY.

REPORT OF THE POSTMASTER GENERAL.

GENERAL POST OFFICE DEPARTMENT,
November 30, 1833.

To the President of the United States:

SIR: When, in 1829, the functions of this Department devolved upon me, the annual transportation of the mail amounted to $13,700,000. The contracts then in existence, with the other expenses of the Department, had, within the year ending the 30th June, 1829, diminished its surplus revenue $101,256 03, and those contracts were still in force from one to four years in prospect.

The surplus available revenue had been reduced to the nominal amount of - -	$230,849 07
But it has subsequently been ascertained, that there had been expenses incurred for transportation performed prior to the 1st of July, 1829, which were not embraced in that account, to the amount of - - - -	$64,248 76
Which reduced the real surplus to	$166,600 31

The annual transportation of the mail was, on the 1st July, 1833, 26,854,485 miles.

The annual amount of the transportation of the mail in stages and steamboats, on the 1st of July, 1829, was 6,507,818 miles.

The annual amount of the transportation of the mail in stages and steamboats, on the 1st of July, 1833, was 18,322,576 miles.

The expense of transporting the mail for the year ending 30th June, 1829, was $1,153,646 21.

The expense of transporting the mail for the year ending 30th June 1833, was $1,894,688 08.

The gross amount of postages, constituting the revenues of the Department, was, for the year ending 30th June, 1829, $1,707,418 42.

The gross amount of postages for the year ending 30th June, 1833, was $2,616,538 27.

The incidental expenses of the Department for the year ending 30th June, 1829, amounted to $69,249 08.

The insidental expenses of the Department for the year ending 30th June, 1833, amounted to $87,701 61.

The number of post offices in the United States on the 1st of July, 1829, was 8,004.

On the 1st of July, 1832, the number of post offices in the United States was 10,127.

The increase of the annual transportation of the mail within the four years ending on the 30th June, 1833, is 13,154,485 miles; nearly equal to the whole amount of transportation in 1829.

The increase of the annual amount of postages within the same period, is $909,119 85, and the whole amount is more than the double of what it was in 1825.

The average expense of transporting the mail in 1829, was eight cents and four-tenths of a cent per mile.

The average expense of transporting the mail in 1833, is seven cents and fifty-seven hundredths of a cent per mile; making a difference in the rate per mile, of eighty-three-hundredths of a cent, equal, for the whole service, to $222,892 22 per year less, in proportion to the service performed, than the expense of transportation in 1829, besides a great increase in expedition between the principal commercial cities, and a much greater proportion of the whole performed in stages.

After carrying into effect the law of the last Congress establishing new mail routes, the present length of mail roads in the United States, amounts to 119,916 miles, viz:

	Miles.		Miles.
In Maine,	3,824	In Florida,	1,131
N. Hampshire,	2,460	Alabama,	4,433
Vermont,	2,531	Mississippi,	2,462
Massachusetts,	4,845	Louisiana,	1,462
Rhode Island,	491	Arkansas,	2,309
Connecticut,	2,701	Tennessee,	6,761
New York,	13,256	Kentucky,	5,993
New Jersey,	1,961	Ohio,	8,977
Pennsylvania,	11,010	Michigan,	1,495
Delaware,	494	Indiana,	5,361
Maryland,	2,102	Illinois,	4,459
Virginia,	10,588	Missouri,	2,170
N. Carolina,	6,850		
S. Carolina,	4,516	Making together	119,916
Georgia,	5,274		

Over these roads, the annual transportation of the mail on the first of July last, was,

	In stages.	In steamboats.	On horseback and in sulkies.	Total.
	Miles.	Miles.	Miles.	Miles.
In Maine	708,184	3,328	267,010	978,522
New Hampshire	622,238		111,854	734,092
Vermont	634,666		106,260	740,926
Massachusetts	1,573,610	23,712	150,037	1,737,389
Rhode Island	117,988		16,692	134,680
Connecticut	598,987	17 376	175,608	791,971
New York	3,053,558	155,339	854,937	4,063,834
New Jersey	518,330		100,840	619,170
Pennsylvania	2,414,800		762,873	3,177,674
Delaware	92,674		17,264	109,938
Maryland	585,792	58,380	161,588	805,760
Virginia	1,277,846	88,500	778,906	2,145,252
North Carolina	829,415	15,288	427,076	1,271,779
South Carolina	658,524		275,548	934,072
Georgia	368,012		498,626	866,638
Florida	47,112	41, 00	86,612	175,324
Alabama	429,978	96,360	353,652	879,990
Mississippi	78,002		282,756	360,758
Louisiana	48,516	15,704	156,676	220,896
Arkansas			231,556	231,556
Tennessee	513,453		502,320	1,015,773
Kentucky	628,072	45,000	540,240	1,213,312
Ohio	1,216,801	47,150	618,190	1,882,141
Michigan	144,952		89,512	234,464
Indiana	196,268	21,000	487,814	705,082
Illinois	236,522		293,278	529,800
Missouri	79,508		184,184	263,692
Total,	17,693,839	628,737	8,531,909	26,854,485

The increase of transportation from the 1st July, 1832, to the 1st July, 1833, has been,

In stages,	1,471,096	miles.
In steamboats,	129,436	"
On horseback and in sulkies,	1,628,932	"
Making together,	3,229,464	"

The method in which the accounts of the expenses of transporting the mail have always been kept in this department, has led to a misapprehension of the means of extending improvements in mail facilities. It appears, from the earliest records of the department, to have been a rule not to enter to the credit of a contractor, nor to charge to the account of transportation, the expense of carrying the mail on his route, till after he had signed his contract and bond, and returned them to the department with proper security, though the service may have been regularly performed, and, in many instances, the moneys actually paid. It has sometimes happened that contracts of the greatest magnitude have, from various causes, remained for more than a year unreturned. In such cases, though the expenses have been incurred, they do not appear in the transportation account, and though the moneys have been paid to the contractors, they stand on the books as balances to that amount due from them to the department, constituting a part of its surplus fund; when, in fact, they constitute a part of the actual expense incurred for the transportation of the mail. The consequence has been, that the expenses for transporting the mail within any given period of time, as shown in the accounts, and reported annually through the Executive, have been always calculated to exhibit an amount considerably less than what has actually been incurred. This is an imperfection not of recent origin, but one which appears to have been co-existent with the department. When the number of contracts was few, and the surplus revenue bore a large ratio to its whole annual amount, the effect was unimportant; but in the increased number of mail routes, and the diminution of its surplus revenue, it was calculated to produce serious inconvenience. From the statements growing out of this system, thus illusory in their results, together with the great expense of carrying into effect the law of the last Congress establishing new mail routes, and a disposition to gratify the wishes of the public in the improvement of mail facilities, I was led to carry those improvements to an extent which it was found the resources of the department would not well sustain. When the inconvenience was felt, the cause was carefully investigated, and the following result was disclosed. Prompt directions were given for the correction of the error in future. It is not possible to determine, to an exact certainty, the whole expense incurred for transportation within any recent period; because it will often happen that improvements will become necessary, even for the fulfilment of existing laws, the expenses of which, for want of proper evidence, must be reserved for subsequent adjustment, and so come into the account for a later period than that in which the services were performed. But these variations are of an inconsiderable amount compared with the differences resulting from the system heretofore observed.

On the 30th of June, 1829, which was the close of the first quarter in which I had assumed the functions of the department, the expenses which had been incurred for transporting the mail were $64,248 76 more than the amount stated in my report to that day.

On the 1st day of July, 1832, the day to which my last report reaches, there was stated to be a surplus of available funds, after defraying all the expenses of the department up to that day, of $202,811 40

It is, however, now ascertained, that the expenses incurred for transportation which had actually been performed prior to the 1st July, 1832, beyond the amount stated in that report, were	205,656 07
So that instead of a surplus on that day, the department was actually indebted on the 1st day of July, 1832, beyond the whole amount of its available funds, admitting that no losses of postages should be sustained	2,844 67

The gross amount of postages for the year ending the 30th June, 1832, was	2,258,570 17
The gross amount of postages for the year ending the 30th June, 1833, was	2,616,538 27
Making an increase for the year over the former year of	$357,968 10

The nett proceeds of postages, after deducting commissions to postmasters and the contingent expenses of their offices, for the year ending the 30th June, 1832, was $1,543,096 49

For the year ending June 30, 1833, it was	1,790,254 65
Making an increase of net proceeds for the year, of	$247,156 16

The expenses of the Department, incurred for the year ending June 30, 1833, were as follows, viz:

Compensation to postmasters, including the contingent expenses of their offices—		
3d quarter, 1832,	$202,431 26	
4th, quarter, "	200,151 51	
1st quarter, 1833,	214,935 50	
2d quarter, "	208,765 35	
		$826,283 62
Transportation of the mail—		
3d quarter, 1832,	435,892 95	
4th quarter, "	441,183 01	
1st quarter, 1833,	499,185 96	
2d quarter, "	518,426 16	
		1,894,688 08
Incidental expenses for the year,		87,701 61
Making together, - - -		$2,808,673 31
The gross amount of postages for the same period was—		
3d quarter, 1832,	642,689 22	
4th quarter, "	630,464 47	
1st quarter, 1833,	673,957 67	
2d quarter, "	669,426 91	
		2,616,538 27
Leaving a deficit of - -		192,135 04
Add this sum paid into the Treasury by irregular deposites, having been placed by the receiving officer to the credit of that department instead of this, - -		228 69
The balance due by the department on the 1st July, 1832, as above stated, - - -		2,844 67
And the department was indebted on the 1st July, 1833, beyond the amount of available balances due to it, in the sum of - -		$195,208 40
The annual expense of transporting the mail under existing contracts, with all their improvements, is - - -		$2,033,289 42
The incidental expenses of the department, estimated at -		90,000 00
Making the aggregate expense for a year, - -		$2,123,289 42
The nett proceeds of postages for the year ending the 30th June, 1833, amounted to	$1,790,254 65	
The nett increase for that year over the preceding year, and which may be safely estimated as continuing was -	247,156 16	

Making the nett revenue for the current year, - - - $2,037,410 81

Leaving a deficit of - - $85,878 61

The former method of keeping the accounts of the expenses of transportation would have left out of this report expenses for transportation, as if they had not been incurred, because not entered under their proper dates, the sum of $91,658 82, viz:

For services performed prior to July, 1, 1832, - - -	$22,294 44
For services performed during 3d quarter, 1832, - -	9,420 50
4th quarter, 1832, -	9,932 21
1st quarter, 1833, -	22,872 70
2d quarter, 1833, -	27,138 97
Making together, - -	$91,658 82

This, had the imperfection of that system remained unobserved, would have made the Department appear to be less indebted, by that amount, than what it is in reality.

The discovery of the excess of expenditures beyond its revenues, at once showed the necessity of retrenchment. The only practicable means of doing this, was the withdrawal of some of the improvements which had been made, and on such routes as would be least injurious to the public, and least prejudicial to the revenues of the Department.

This has been done with great care and attention to these two points. The reductions have been directed on the transportation to take effect from the 1st of January next, to the annual amonnt of	$202,370
The contracts have been renewed for the southwestern section, comprising the States of Louisiana, Mississippi, Alabama, Tennessee, Missouri, Illinois, and Indiana, and the Territory of Arkansas, with a greater amount of improvements than curtails, at an annual saving of	71,893
Making together an annual retrenchment in the expenses of the Department, of - -	$274,263

In making these retreechments, many of the principal contractors who were to be affected by them, seeing the necessity which induced the measure, have readily declared their cordial acquiescence in it; and, with a patriotic spirit becoming their character, have shown a determination to sustain the Department, as a paramount object, at any sacrifices which it may require on their part.

After the reductions shall take effect, the annual transportation of the mail will still be 25,527,957 miles, viz:

	In stages.	In steam boats.	Horse-back and sulkies.	Total.
In Maine...........	635,402	3,328	271,274	910,004
New Hampshire.	622,238		111,854	734,092
Vermont.........	636,122		104,076	740,198
Massachusetts ...	1,553,248	23,712	145,229	1,722,189
Rhode Island.....	117,988		16,692	134,680
Connecticut	587,739	17,376	175,608	780,723
New York.......	2,982,638	155,339	884,829	4,022,806
New Jersey......	517,854		100,840	618,694
Pennsylvania	2,080,929		764,329	2,845,258
Delaware........	104,010		17,264	121,274
Maryland........	570,796	58,360	161,588	790,694
Virginia	1,044,246	46,900	778,906	1,870,052
North Carolina...	733,423	15,288	413,660	1,162,371
South Carolina...	602,256		275,548	877,804
Georgia..........	278,024		498,626	776,650
Florida..........	47,112	41,600	86,612	175,324
Alabama	429,978	96,360	353,652	879,990
Mississippi	78,002		282,756	360,758
Louisiana........	48,516	15,704	156,676	220,896
Arkansas			231,556	231,556
Tennessee........	513,453		502,320	1,015,773
Kentucky........	586,992	45,000	526,824	1,158,816
Ohio............	1,005,369	47,150	617,358	1,669,877
Michigan........	112,088		97,416	209,504
Indiana	196,268	21,600	487,814	705,682
Illinois..........	236,522		293,278	529,800
Missouri.........	79,508		184,184	263,692
Total.........	16,400,651	587,137	8,540,169	25,527,957

Thus, it will appear, that but a part of the improvements will be withdrawn, to enable the Department still to rely exclusively on its own resources, as the annual transportation will still be, after the 1st January next, 1,902,936 miles more than it was on the 1st July, 1832.

I have the honor to be, very respectfully, your obedient servant, W. T. BARRY.

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.
S1 R J M M & F

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

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AMERICAN FLORIST, with 36 figures—price 36 cts.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ½ inch,
200 do. 1¼ do. ½ do.
40 do. 1½ do. ⅜ do.
800 do. 2 do. ½ do.
800 do. 2¼ do. ⅝ do.
soon expected.
Flat Bars in lengths of 14 to 15 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. o73meowr

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.
WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for layin out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.
HENRY R. CAMPBELL, Eng. Philad.,
m1 ly Germant. and Norrist. Railroad

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.
J25 tf

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also. AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming acquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. m26

Railroad from Philadelphia to York, (Penn.)—We observe by the York papers that a public meeting was called in that borough for Thursday evening, to take measures for procuring the extension of the Philadelphia and Columbia railroad to that place. The Lancaster Examiner in noticing the subject, says, such an extension we have no doubt will be made without much delay.

From other sources we learn that the railroad from Philadelphia to Columbia is expected to be completed and in operation some time during the coming winter. When it shall be extended to York, if not before, it strikes us as constituting a subject that ought to be deemed of some interest to the people of Baltimore. At present, and for many years past, the agricultural products of York county have been taken to the Baltimore market. Will it not be otherwise when the railroad from Philadelphia is completed to York?—unless the Baltimore railroad be also extended to that town? When it was turnpike against turnpike, the Baltimore market had nothing to fear, in regard to the competition for the traffic of this fruitful country; but when we have only a turnpike to oppose to a Railroad, it is such a change of the condition of things as may hazard the loss of a good portion of the traffic. At all events, the subject deserves consideration, to see if there be a remedy.—[Baltimore Patriot.]

Ohio.—The Legislature assembled at Columbus 2d inst. Gov. Lucas transmitted his Message on 3d inst. which is long, but confined entirely—as generally speaking such messages should be—to State affairs. The Governor recommends unhesitatingly the establishment of a *State Bank*, with such capital as will be sufficient to supply to the extent which may be found needful, a present admitted deficiency of the circulating medium.

On the subject of the Ohio Canals, in which there is much interest felt in this State and in this city, we extract what the Governor says—

From the Report of the Auditor and Treasurer of State, it will be perceived that the finances of the State are in a prosperous condition. The balance of the different funds that remained in the State Treasury on the 15th November, 1833, as reported by the Auditor, amounted to $185,193 61 4

The amount of foreign Canal debt		$4,500,000 00 0
Interest payable annually to foreign Stockholders on $400,000, at 5 per cent., and on $4,100,000, at 6 per cent. amounts to		$266,000 00 0
Amount of loan drawn from the School fund for Canal purposes,		$504,391 88 7
The interest on which amounting to about		$33,500 00 0
applicable to the Common School fund.		
The amount of the Canal debt, foreign and domestic, is		$5,064,391 88 7
The amount of Tolls collected on the Ohio Canal for the year ending the 15th of March, 1833, is		$130,026 52 7
The amount of the same on the Miami Canal.		49,946 54 0
Total amount of collections on the Ohio and Miami Canals,		179,973 06 7
Deduct contingent expenses on the Ohio Canal,	$5,674 63 0	
Do. Miami	3,920 00 0	
		9,614 63 0
Total amount of Tolls paid into the State Treasury,		170,358 43 7
Amount paid into the Treasury by A. Kelley for water rents and lots sold,		1,981 14 0
Amount paid into the Treasury for the sales of Ohio Canal lands,		115,759 63 0
Total paid into the Treasury from tolls, water rents and sales of Ohio Canal lands,		$288,099 20 7

Thus it appears that the receipts into the Treasury within the last year, for the sales of Ohio Canal lands, water rents and tolls, will pay the interest on the foreign Canal debt, and twenty-two thousand ninety-nine dollars, twenty cents and seven mills over. This sum goes to our citizens, and is added to the school fund. The receipts of tolls next year, it is anticipated, will be sufficient to pay the interest on the whole Canal debt, and will gradually thereafter accumulate a surplus sufficient in amount if profitably invested, to extinguish the whole Canal debt, by the time it become due.

The amount of money paid into the State Treasury for the sales of the Miami Canal lands, for the year ending the 15th November, 1833, is $112,207 957

From which deduct the amount paid Canal fund Commissioners, to pay Contractors on the Miami Canal	55,000 00 0
Expenses paid Receivers, Registers and others,	3,267 87 0
Total amount drawn from the Treasury,	58,297 87 0
Balance remaining in the Treasury, 15th Nov. 1833,	53,940 08 0

This sum has been received from the sales of those lands that were brought into market, under the provisions of the Act of 21st of December, 1831; and cannot be applied to any other purpose than to the extension of the Miami Canals. Seventeen miles of this Canal north of Dayton were put under contract within the last season, the work on which is progressing, and the sales of the lands continue to be uninterrupted.

There is no part of our State policy that we can contemplate with more satisfaction

---

Naval Lyceum.—We have great pleasure in annexing the names of the officers, &c. of this association, recently formed at this Station by the officers of the Navy and Marine Corps. The objects in view—besides drawing closer the bonds of intercourse and friendship of all engaged in a common service—are to provide a library—a museum or depository, for rare objects of natural history, for the collection of which the diversified service of the Navy in all climates affords so many opportunities—and a reading room, where the best publications, periodical and others, may be seen. We are quite sure the Head of the Navy department should, and do not doubt he will, approve and aid in all that depends upon him, the objects of this association.

Officers of the "United States Naval Lyceum" established at the Navy Yard New York.

Com. Charles G. Ridgely,	President.
Captain M. C. Perry,	1st Vice President.
Lieut. Col. John M. Gamble,	2d " "
Tunis Craven Esq.,	3d " "
Lieut. Wm. L. Hudson,	4th " "
Lieut. Henry Pinkney, Dr. John Haslett,	Corresponding Sect's.
Henry J. Willett Esq., A. B. Ellison,	Recording Sect's.
George W. Lee,	Treasurer.
Dr. Thomas L. Smith,	Librarian.
Mr. John Bellingham,	Assistant Librarian.
Mr. Samuel M. Pook,	Draftsman.

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Lieut. Wm. L. Hudson,	Samuel Hartt, Esq.
Lieut. Wm. S. Ogden,	Mr. John Robinson.

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C. O. Handy, Esq.	D. Thos. L. Smith.
Lieut. A. A. Nicholson,	
Dr. D. S. Edwards.	

Curators.

Capt. M. C. Perry, Dr. Wm. Swift,
Lieut. James Glynn, Dr. Thos. L. Smith,
Dr. D. S. Edwards.

Chevalier F. Tacen had an audience of the President on Wednesday last, and presented his new credentials as Envoy Extraordinary and Minister Plenipotentiary from the Queen Regent of Spain.

Later from Europe.—The Montreal packet ship from London, brings papers to 8th November from that port. They furnish Paris dates of 5th Nov. and Madrid of 28th Oct., five days later from the las city than those by the Plato, arrived here from Malaga.

The young Queen, *Donna Isabella*, was proclaimed on the 24th in Madrid, with great enthusiasm. The Royalist Volunteers, a sort of seditious city militia in that capital, were disarmed on the 27th—not, however, without some bloodshed.

The Madrid Gazette of 24th contains, it is said by a Paris correspondent of the Times, many excellent decrees of unexpected liberality. That which relates to an amnesty of the past, however, is deemed incomplete for its omission of many liberal names of repute, and that of *Mina* in particular. *Francisco Xavire de Burgos*, lately named Minister *del fomento*, is considered as the adviser of these and other measures of reform. The property of Don Carlos, said to be very large, was confiscated by royal decree. We nowhere hear of the appearance of this personage.

The report, via Bordeaux, of 40,000 French troops marching towards the Spanish frontiers, turns out to be without any other foundation than that derived rom the military movements incident to change of garrisons in the south of France.

From Portugal there is nothing new.

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal. d6

☞ **TOWNSEND & DURFEE**, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co, Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, January 29, 1833. F3 tf

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

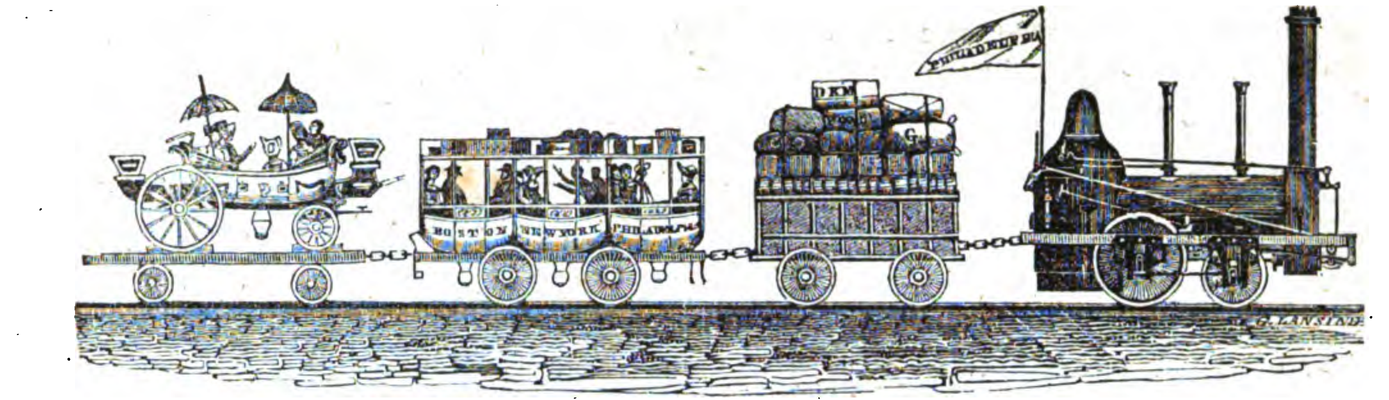
HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J. Townsend, Albany, and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

PUBLISHED WEEKLY, AT No. 35 WALL STREET, NEW-YORK, AT THREE DOLLARS PER ANNUM, PAYABLE IN ADVANCE.

D. K. MINOR, EDITOR.] SATURDAY, DECEMBER 21, 1833. [VOLUME II.—No. 51.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, DECEMBER 21, 1833.

Pennsylvania Canal Commissioners' Report.—The report on the state of the internal improvements of Pennsylvania, made to the Legislature, by the Canal Commissioners, contains much information of an interesting and important character.

The Board believe that they may confidently calculate upon the opening of the canal navigation in the spring, by the 10th of March. At that time the following lines will be in use :

A railway from Philadelphia to Columbia twenty-two miles, with double tracks, and sixty with a single track, making	82 Miles
A canal from Columbia to Hollidaysburg,	171 4.3
Portage railway over the Allegheny mountain, between Hollidaysburg and Conemaugh, from basin to basin,	36
A canal from Conemaugh to Pittsburg,	104 1-4
Distance from Philadelpia, to Pitts, burg,	394 Miles
A canal from the junction, on Duncan's Island, near the mouth of the Juniata, up the Susquehannah and North Branch to the mouth of Solomon's creek in Luzerne county, (two hundred and twenty three miles distant from Philadelphia,)	96 3-4
A canal from the junction at Northumberland, up the West Branch to the head of the pool of the Muncy Dam, in Lycoming county, [one hundred and ninety and a half miles from Philadelphia]	28 1-2
A canal from Bristol to Easton, on the Delaware, [eighty miles from Philadelphia.]	59 3-4
A canal from the Ohio river, twenty-eight miles below Pittsburg, up the Big Bever creek to New Castle, in Mercer county,	24 3-4
A canal from the Allegheny river at the town of Franklin, up French creek to near the feeder aqueduct, in Crawford county,	22 1-4
The continuation of the Portage rail way along side of the basins at Hollidaysburg and Conemaugh, the Conemaugh feeder and Alleghenytown branch on on the Western division—the South fork and Raystown feeders on the Juniata division—and Lewisburg side cut on the West Branch divisions, form an aggregate of	8
Number of miles of canals and railway ready for use,	632

The Board enter into full details of the breaches and interruptions which have occurred on the several lines during the past season, which they represent as having been greatly magnified by "those governed by a mistaken policy." They maintain that the navigation of the main line of the Canal was maintained throughout the season with but slight delays, and speak with regret of the rumors of breaches and failures, having, in some degree, lessened the transportation business. The experience of the past season has enabled the Canal Commissioners to discover some defects in portions of the several lines, which they will be able to remedy in the course of the winter.

The amount of money expended for current repairs is as follows :

	Miles.	
Eastern division,	45	$12.163 53
Juniata division and feeders,	132	13,748 33
Western division,	105	23,854 15
Susquehannah division,	37	20,579 56
West Branch division,	26 1-2	20,956 27
North Branch division,	59 1-2	20,304 19
Delaware division,	59 3-4	59,408 33
French creek feeder,	19 1-2	5,699 01
		$179,013 37

The tolls paid into the Treasury during the year ending Oct. 31st, amount to $151,419 09, which sum, the Board believe, will be increased during the navigable season to near two hundred thousand dollars.

A minute statement is given of the situation of the Canals and Railroads, and estimates made of the amount necessary to place the whole in complete order.

The following sum has been paid within the last year, upon the several divisions, for damages, $72,244 10.

A statement of the sums appropriated and applicable to the new lines, and of the sums required to complete the same.

	Sums appropriated.	*Sums required.*
Columbia Railway,	$2,402,100 36	$801,895 58
Portage Railway,	1,214,793 06	367,816 35
Beaver division and Shenango towing path	424,241 62	57,011 36
Franklin line & north and west ends feeder,	348,100 29	94,398 05
Wyoming line and Lackawana feeder,	284,892 85	17,321 28
Lycoming line, and Lewisburg & Bald Eagle side cuts,	857,431 76	301,149 08
Frankstown line and South Branch feeder,	781,101 29	
Columbia line, eight miles, 227 perches,	165,750 30	
Sum required to complete,		$1,640,672 00
There will be required for new work upon old lines, and for the purchase of lots for houses and offices for collectors and lock keepers and to pay debts due,		100,000 00
To pay debts due by supervisors for labor and materials,	64,298 58	
For repairs the ensuing year,	410,701 42	
		475,000 00
To pay damages,		49,328 00
Amounting to,		$2,265,000 00

Delaware and Hudson Canal Company.—One of the morning papers states that the amount of tolls received by this Company during the past season, exceeds $3,000. This, we are informed, is a typographical error. The tolls exceed $37,000 on articles independent of coal. Of this latter 111,777 tons have this year been brought to market—953 vessels have loaded at Rondout with this coal, and carried 98,800 tons.

Statistics of the Globe.—The rapid population of the globe is estimated variously from 600,000,000 to 800,000,900; the geographical square miles at nearly 38,000,000, or 49,000,000 English square miles. The population to a square mile is, in France 61, Asia 27, Africa 10, America 3, Oceanica less than 1; the average of all about 17. The densest population in any whole province or state, is in Hamburg, where it is 1302 to a square mile. It is 980 in Bremen, 783 in Frankfort, 523 in Lubec, 464 in Lucca (Italy), 392 in Belgium, 314 in Saxony, 277 in Holland, 257 in Great Britain, the Sicilies 236, 208 in France, Austria 16[illegible], Prussia 155, Portugal 121, Denmark 119, Spain 101, Turkey 63, Greece 51, Russia 37.

In Asia some provinces have a population of from 200 to 500 to the square mile; Japan 139, China 42, Siam 57, English Indian Empire 185. In Africa, Morocco has 46, Tunis 45, and some of the interior kingdoms a little more. In America, Hayti has 36, Central America 12, Chili 10, United States 7½, Mexico 6.—[N. E. Farmer.]

Internal Improvements, No. III. By F: To the Editor of the American Railroad Journal, and Advocate of Internal Improvements.

Sir—The faculties of the human race may remain for generations in a state of torpor, but when once roused into action, they cannot easily be lulled again into inactivity and repose. Thus all innovations on old established customs, however plausible in appearance, are ever treated with distrust, and only admitted to confidence after a long series of successful experiments may have demonstrated the truth of the principles advanced. Then, as the eyes of men gradually open, and the cloud which had obscured their understandings is dispersed, they begin to marvel at the obtuseness of their own perceptions in not sooner comprehending the nature of the advantages predicted. How far this will be exemplified in the introduction of steam carriages on common roads, as a subsitute for horse power, in the transport of goods and passengers, remains yet to be proved. Sceptics have not been wanting, to vociferate their timidity against its preferment, and pronounce its visionary character; and yet, the time may not be distant when the project will be hailed by the whole British nation as a confirmed blessing, and another step in the grand march of practical science. She may, ere long, be destined to witness her highways and byways, like her railroads and rivers, traversed from one end of the kingdom to the other, under the all-pervading influence of steam.

Experiments have already been made on a large scale, and with sufficient success to demonstrate to the minds of all those who feel an interest in the subject, the practicability, as well as capability, of the project, to realize all the hopes and expectations with which it has been endowed by its projectors. That it is destined, at no very remote period, to mark a new and important era in the means of, intercourse among our transatlantic brethren, it would be folly to entertain a doubt; but, at the same time, we do not hesitate to say, that however applicable it may be to their present condition, the time is not yet arrived when its adoption as a matter of expediency can be recommended to this country. Our situation, in this respect, is in no way analogous to that of Great Britain. What would act as a benefit and blessing to her, would, in this case, prove a positive evil to us. But, before attempting to maintain this position, it will be necessary to state the principal objections already advanced against its introduction. They are as follows:—The insecurity of carriages so propelled; the liability of boilers to explosion; the annoyance of travellers by noise of machinery, and the escape of smoke and waste steam. These objections were in part answered before the House of Commons, during the examinations there held to collect information on this subject. It was then stated that the construction of the boilers was such that the steam could only act in very small quantities on any one part, and that even in the event of explosion, the danger would be comparatively trifling, and seldom or never attended by loss of life; that the escape of smoke might be prevented by the use of coke; and that the waste steam might be made to pass into the fire to increase the draft. It was further stated, that carriages properly constructed were capable of attaining a velocity of from ten to thirty-five miles per hour, on a level; that an acclivity of one in six had been surmounted at the rate of sixteen and a half miles per hour; and that a practical velocity of from twelve to fourteen miles per hour, where the minimum breadth of the wheel tire was three and a half inches, might be sustained without injury either to carriage or road.

How far these positions will hold in practice we are not at present prepared to say. But whatever may be the result in England, we need not hesitate to repeat the assertion that the period is very remote when the adoption of steam carriages will be deemed justifiable on the roads of America. It must be remembered that England is burthened with a large surplus population, and that every tax on agricultural produce, as a consequence, is accompanied by a proportionate degree of distress. Every suggestion therefore, in the way of relief, commands immediate attention, and receives encouragement and support according as its merits may seem to justify. In Great Britain, there are more than a million of horses engaged in various ways in the transportation of goods and passengers; and it is estimated that it requires as much land for each horse as would on an average support eight men; or, in other words, the adoption of this new project would increase the capacity of the country to maintain eight millions of souls over and above what it is at present burthened with. Now, under these circumstances, it cannot be denied that the subject is deserving the attention of all philanthropists, not only as having a tendency to alleviate the distress of a large and meritorious portion of the population, but also as obviating the existing necessity for the abuse of that noble spirited animal, the horse. But these arguments cannot obtain in a country like our own, where the whole amount of population is small in comparison of the extent of territory; where large tracts of fertile land yet remain untilled, and extensive forests unlopped, by reason of the paucity of agriculturists. These blanks must be filled up before our harvests can possibly prove unequal to the demand made against them; and then it becomes a question of economy as combined with general convenience to all classes of persons interested.

As to economy, it is roundly asserted by our brethren on the other side of the water, that steam coaches can be run for from one-third to one-fifth the cost of post coaches. This may be true enough—indeed it is believed to be so, from the fact that an ordinary coach, weighing two tons, can carry but eighteen persons, while a steam coach of the same weight, may be made to carry double that number, and that the action of the wheels, where the tire is six inches wide, has a tendency rather to consolidate than cut up the road.

But another consideration of more importance to us claims attention, in the price of coke, which must necessarily enter largely in the expense of running all engines of whatever description, where steam is to be rapidly generated. It is a well established fact, that the price of this article is much greater in this country than in any other; so much so, that it becomes a question whether its use would not thereby be altogether unavailable. Should this prove to be the case, then other means must be resorted to for the destruction of the sublimated and volatilized matter always attendant on the combustion of coals in their natural state. This not admitting of any chemical combination, must be effected in some way by mechanical means. Before the House of Commons, it was stated that the effect might be produced by causing the smoke to pass through sand mixed with quicklime, by which the carbonic acid being absorbed, the carbonic oxyde and hydrogen was left in such a free state as to be combustible. This process, however, is altogether too slow in its operation to admit its practical application for any purposes of locomotion; and it is therefore only deserving of notice as an incitement to further discoveries.

But it may be asked, and with some show of reason, where are our extensive mines of anthracites? This species of coal is of such a nature as at once to do away with every objection that has been advanced against the use of other descriptions; for, not producing smoke of any kind, it may be used with impunity, without having recourse to artificial preparations. This would seem to be true enough, and to a certain extent is so—that is to say, the use of anthracite coals would most assuredly remedy the evil to which the public would be exposed from the escape of smoke, where bituminous coals were used in the generation of steam to propel carriages; but the difficulty unfortunately rests in the fact that steam cannot be generated with sufficient rapidity for this purpose, without the action of flame upon the boiler; and the combustion of this coal not producing any flame, recourse must be had to some extrinsic means for the attainment of that end. This end, it is true, has been particularly attained by experiment in the decomposition of water, by passing a jet under the action of the engine, constantly over the bed of hot coals. But this experiment, though it may eventually be made to answer the purpose, does not as yet seem to have been sufficiently tested in practice to render it available in ordinary cases; and as we do not wish to indulge in speculations of any kind, we shall forbear to express an opinion on the subject until the results of more extended trials may be made known.

It requires, however, no great stretch of human foresight to predict that the introduction of steam carriages on common roads will be a signal to the abandonment of all ordinary modes of travelling. They must be exclusively adopted or not at all, and therefore it will be necessary for all persons, desirous of moving from place to place, to be dependent entirely on the public conveyances for its accomplishment. Now, it is a well known fact, that all farmers who inhabit mountainous districts, or such as are yet unpenetrated by either railroad or canal, must of necessity be their own carriers. The expense of maintaining one, two, or more horses, is comparatively trifling. They are absolutely necessary to the prosecution of their agricultural pursuits, and after their harvests are gathered in, they are equally useful in the transportation of the proceeds to market.

These observations naturally suggest themselves as objections to the introduction of this new mode of conveyance among us for a long time to come; and they are introduced here simply because we think that we have discovered a growing disposition among some of our speculators to embark in the project. Our necessities alone should dictate the period when this revolution ought to take place; and even then, where so many changes are to be made, so many prejudices to be overcome, and so many jarring interests to be reconciled, all the influence of legislative support will be requisite to establish it on a firm foundation.

This period, however, it is believed, has already arrived in England. She feels herself bending under a burthen which, unless soon lightened, will eventually bear her down. She feels the necessity of adopting some decided measures for the relief of the lower orders of society. With these feelings generally prevalent, it is not to be surprised at that her mechanics should take advantage of the first opportunity, that offered a fair prospect of success, to start a fresh track, and open a new avenue to the resources of the country. The facilities afforded by the genius of McAdam pointed out the way; the hard and uniform surface of his roads suggested the practicability of the undertaking; and although we sincerely deprecate its immediate adoption here, we earnestly wish it all the success, in the land of its birth, that its undoubted merits have a right to claim.

F.

New-York, 8th Dec., 1833.

Ithaca and Owego Railroad. By JAMES SEYMOUR. To the Editor of the American Railroad Journal.

DEAR SIR,—In the latter part of September last I travelled over the route for the Ithaca and Owego Railroad, in company with Mr. H. C. Seymour, one of the assistant engineers. The following hasty notes made at the time are at your service :

The length of this road from Owego to Ithaca is about 29 miles, chiefly along the valley of the Owego Creek. The summit is 20¾ miles from Owego, and its height above that place is 376 feet. The depression from the summit level to Ithaca is 602 feet—distance about eight miles. The country along the route is favorable for the construction of a railway.

Mr. Randall, the Chief Engineer, estimates two-thirds of the grading done upon the line—two miles of the rails laid—and that the road will be ready for transportation early in the ensuing summer.

There are two inclined planes between the summit level and Ithaca. The length of the first, (descending from the summit towards Ithaca,) is 2,225¾ feet; rate of ascent 1 foot in 21. The length of the second, (or nearest Ithaca,) is 1,733⅓ feet; rate of ascent is 1 foot in 4·28 feet.

It is proposed to use one stationary power, which is to be placed between the two planes above described, but only applied upon the second, or the one nearest Ithaca ; upon the other horse power is to be employed (at present), as well as upon the remainder of the road. It would seem probable, however, from the proximity of the two planes, and from their being on a line with each other, together with the road between them, that stationary steam power will ultimately be adopted to move the cars upon both, which may be done by an engine of sufficient power .

The curves upon the road appear to be regular, and uniform, and of large radius.

The plans adopted for the construction of the road are as follows :

Upon the chief part of the road, after the bed is formed, trenches are sunk crosswise of the road, into which ties are placed about four feet apart, and then trenches made lengthwise about one foot in depth, filled with gravel, upon which longitudinal sills, 4 by 12 inches, are placed. Upon these sills cross ties are laid, about 3 feet apart, with notches or gains cut to receive the rails, upon which the iron plates, ⅝ by 2¼ inches, are to be placed. The width of the track is 56½ inches.

Upon another part of the road a different plan is adopted. Trenches are sunk crosswise of the road, about 3 feet apart, into which cross ties are placed to receive the longitudinal sills, and giving the sill an equal bearing from end to end. Upon these sills narrow strips of oak or ribbons are placed, to receive the iron plates.

Railroads constructed upon either of the above plans answer very well ; but a plan similar to the last above mentioned is preferable, for these reasons : the rails upon which the cars move present a more permanent and solid surface, and the cost is not as great by at least $1000 per mile.

Your humble servant,
JAMES SEYMOUR.
Montrose, Nov. 11, 1833.

"The observations made during a single voyage across the Atlantic, by a single observer, M. Humboldt, on the aspect of the Antarctic region of the heavens—the peculiar azure of the African sky—the luminous meteors of the atmosphere—the tides, the currents, and the different colors of the ocean, and other phenomena which happened to present themselves to his view—are of more value to the scientific world than the observations of ten thousands of other beings who, for a series of years, have traversed the same regions."

Fourth Annual Report of the Chief Engineer of the Baltimore and Ohio Railroad.

Engineer's Office, Baltimore and Ohio Railroad.
Baltimore, Oct. 5, 1833.

TO PHILIP E. THOMAS, *President, &c.*

The fourth annual report of this department which I have now the honor to present will be rendered the more brief on account of the advanced stage and the greater maturity of our operations. In the more early progress of this work, with the very limited stock of information then before us, it was found indispensable that novel applications of principles should be investigated, and that many experiments should be made, requiring the utmost skill and science at our command, and the most anxious care and industry on our part in order to arrive at safe and satisfactory conclusions. These investigations have been actively prosecuted; principles have been combined ; many experiments involving very complicated details have been made, and results of high importance to the railroad system have been obtained ; the railway has been put into successful operation, and it now only remains to pursue the design by giving to the machinery its required extension, and availing of its utmost perfectibility, in order to accomplish to the fullest extent of economy the great task in which we have been engaged.

In my last annual report it was announced that the new locomotive steam engine "Atlantic," built by Davis and Gartner, of York, Pa. had performed satisfactorily with anthracite coal as the fuel, through the test of a month's use on the railroad. This engine employs cast iron chilled wheels, three feet in diameter, and is geared to obtain twice the speed on the road that would result without the gearing, with the same velocity of piston, and is constructed with the upright tubular boiler of Cooper.

Much service has been performed by this engine in the course of the past year, but as several such machines would have been required to do all the work of transportation, and as these were not upon the road, the entire horse establishment had still to be maintained, and consequently it was not desirable to work this engine to a greater extent than would be necessary to evince its continued efficiency, or to detect its errors or deficiencies, should any be found to exist either in principle or construction. This precaution of subjecting it to a sufficient test seemed to be necessary previous to venturing upon an expenditure on many such machines, and more so as from unavoidable defects in the consistency of the material of the working parts, (common to all machines,) and the complication and great and sudden variation in intensity of the strains upon them in the course of locomotion, our knowledge of the correct proportions of these parts could be obtained only through experience. This engine is still in operation, and the result is entirely satisfactory, as to the boiler and the combustion, as well as the exclusive use of anthracite coal, and consequently as to the *power* of this machine, and nothing more is wanted to demonstrate the entire practicability and utility of this fuel for the locomotive engine. It is true that some economy of fuel may be realized from slight modifications in the fire place, boiler and tubes, and especially by giving additional length to the latter. The modification last mentioned has already been resolved upon in relation to future engines. Although the engine has been in use many months, and has run upwards of 13,000 miles, yet not a single tube has failed or given way, and consequently there is reasonable ground to expect that the tubes, (though of iron,) will be comparatively durable.

The circumstance of a more rapid change of place and circulation obtaining amongst different portions of the water, and the impossibility of the subsidence and lodgement of sediment upon the tubes when these and the boiler stand upright, would lead us to expect, independent of experiment, a greater duration of the tubes than when they are horizontal in a boiler of corresponding position. The time which the tubes have lasted in the Atlantic, and the frequency of their failure in the English engines, when the position is horizontal, appears to confirm the foregoing conclusion. The English have employed both iron and copper tubes, but still complain that the frequent failure of these constitutes one of the greatest sources of expense attendant upon the working of the locomotive engine, and tubes of brass are proposed at Liverpool as likely to produce economy. With the upright boiler, however, it does not appear that much loss from the burning out and bursting of tubes, will be experienced. Nevertheless, in my report of the 27th July last, hereunto annexed, marked W. R. in relation to the proposed Washington railway, I have estimated the annual cost of tubes for an engine in constant use at $504. That this sum will be fully adequate to the object, there can now be but little doubt.

Two points of great interest, therefore, in relation to the value of steam locomotion upon railways, have been determined, and efficiently combined under the auspices of the Baltimore and Ohio Railroad Company upon their road, viz. : 1. *The upright tubular boiler*, and 2. *The successful application of anthracite coal.* The first has the advantage of durability, compactness, and above all, of a most rapid generation of steam ; the second gives a cheap fuel, free from smoke and sparks, for locomotives employed in the states bordering upon the sea coast. The latter will sooner or later be viewed as a most useful attainment in connection with the railway system, when the benefit which this company will have conferred upon the community in attaining this object will be felt and acknowledged. From a recent discovery of anthracite coal on the Potomac river, it is probable that the price of that fuel will yet be reduced much below its present cost, and that the advantages to the company from the employment of the locomotive engine will be proportionally increased.

The course of trial, however, that tested and proved the adequacy of what may be denominated the vital parts of the Atlantic engine already described, has, at the same time, served to discover certain defects in the consistency and proportion of those working parts most liable to wear and break. It was found that the driving road wheels, each of which worked upon the rail, with an insistent weight of two tons, soon yielded to the action and became worn, especially upon the more conical part near the flange, where the form became changed in a considerable degree from the circular to the polygonal—causing jolts and concussion, especially when the engine moved at considerable speed; and abating the efficacy of the machine, more particularly in curves, whilst the unevenness in the motion tended to injure the spur and pinion wheels, whose office it is to multiply the speed. Moreover, the axles that were at first used, proved too weak to withstand the strains to which, at times, they were subjected, and their fracture, and simultaneously that of the spur and pinion, ensued. In all this no fault could justly attach to any one, dimensions had been given that seemed ample to oppose the probable strains, and from calculation, based upon the experimental trials of the strength of malleable iron, and the assumed probable stress, the result was equally favorable to a sufficiency of strength. But to the well ascertained strains to which the revolving parts of local or stationary engines are subject, there was superadded, in the progressive motion of the locomotive, certain lateral impulsions of unforeseen and therefore unknown intensity, that presented a problem in which a new term had to be determined experimentally in the running of the engine itself upon the railway. Accordingly, the axles have been increased in diameter so as to withstand the trials to which they are liable. This remedy was a plain one. The comparative strength being as the cube of the diameters, a small increase of dimension in that direction would render the strength relatively insuperable. It was likewise found that sufficient strength to prevent fracture could readily be given to the cast iron locomotive road wheels of three feet in diameter. But the evil already alluded to of a deficient degree of hardness to be obtained in the process of chilling was a very different affair, and not to be remedied by simple addition of dimensions. It was discovered that by the method hitherto practised, the three feet wheels were less effectually chilled than the two and a half feet wheels; and this was accounted for from the known fact that, in cooling, the larger wheel would contract to a greater extent, and recede further from the rigid iron chill, applied to the exterior of the periphery, than would the smaller wheel, from the chill applied to it; and, consequently, in the case of the larger wheel, although the exterior of the rim should be chilled in the instant of casting, yet on receding from the cold iron of the chill, the interior unchilled parts would immediately impart a portion of heat to the exterior chilled parts sufficient to *anneal* the latter, and destroy the effects of the chill. Thus the efficacy of a coned wheel, if more than two and a half feet in diameter, seemed to be lost; and the consequences would have been serious. The science, skill and genius of the Engineers and Mechanics in the service of the company were therefore now directed to this point, and I am happy to be enabled state in this communication that two successful methods of attaining a good and perfect chilling have been suggested and put into practice. The one method consists in applying to the inner periphery of the rim on the side of the spokes next to the flange, and in the region of the conic part, *a second chill concentric with the first or exterior chill.* Now as the contracting metal, immediately after casting, recedes from the exterior chill, it would press upon the interior one, whilst the contact would cause the latter chill to absorb the heat that would otherwise have *annealed* the exterior periphery of the rim, and destroyed the hardness already communicated from the exterior chill. The process in trial justified the expectation, and a perfect chilling was attained, precisely in that part of the rim where most needful. This manner of effecting the object was first proposed by Ross Winans, assistant engineer of machinery. In the commencement the failure of this process was threatened from a mechanical difficulty that may here be mentioned with the obviating expedient that proved effectual. So soon as the fluid metal should begin to coal it would shrink and contract upon the interior chill of cold rigid iron, and with an intensity increasing rapidly with the abstraction of heat, at the same time that the malleability would diminish, and the consequence would be fracture. At first it was suggested to elevate, by means of a lever and appropriate connexions, the chill from the rim of the wheel, as the latter should contract, a slope upon the surface of the chill being given to facilitate the operation. It was, however, thought to be difficult, if not impracticable, to execute this design for every wheel and with proper and timely effect, and it was abandoned for the effectual method that immediately succeeded in the course of thought, and which bears the test of experiment. It is simply to give such a slope to the face of the chill; that it shall slide on the correspondingly sloped face of tee casting as the latter shall cool and contract. The form of the chill is that of a conic frustrum with the smaller end downwards upon the arms of the wheel, and the slope of the slant side makes an angle with the axis of the cone of 30 degrees, and imparts to the interior surface of the rim of the wheel a form consistent with strength and symmetry. As the metal cools in the new cast wheel, its contractile force overcomes upon that angle the friction, gravity, and inertia of the chill which slides upon the grasping metal of the rim, and is elevated, presenting in its upward movement successive lesser dimensions to the contracting wheel, whilst the latter, from its tenacity being more than equal to the sum of the three forces that oppose the displacement of the chill vertically, is not fractured. In this process the rim of the wheel is chilled and hardened thoroughly from the exterior to the interior side between the flange and the part where the spokes attach. It is consequently, however, rendered more liable in use to be fractured from concussions upon the railway, but this may be obviated by adding metal and giving additional thickness to the rim.

The other method of securing the efficacy of the chilling process in a very effectual degree was proposed by Phineas Davis, and consists in casting the rim so that the fluid metal shall surround and inclose within its body a ring of cold malleable iron concentric with the wheel. The effect of the presence of the ring in the interior of the body of the casting, is to abstract the heat from the fluid mass to an extent that assures a perfect chilling on the exterior of the rim, notwithstanding the recession from the chill in cooling; whilst the chilling power of the ring does not extend to harden the inner or opposite side of the rim, which is therefore not quite so liable to fracture as is chilled according to the method previously described. The method with the ring or rings (for there may be two of them) has the superadded good property of giving strength to the wheel, and safety from disaster in case of the fracture of the cast metal in rapid movement upon the railway; since the tenacity of the malleable ring or rings situated in the midst of the body of the ring, and pervading the whole length of the periphery, will be competent to hold the wheel together and prevent its parting, even after the occurrence of a fracture in the rim. Several wheels formed after this method were broken with a heavy sledge hammer, but the segments of the fractured rim were still held together by the tenacity of the unbroken malleable ring, which last was found to be so exceedingly tough, that it was necessary to cut it before the broken parts of the casting could be disengaged one from the other. These examinations furnish ample evidence of the very best of chilling due to the presence of the ring, and of its probable value as a ligament to give strength and safety to the cast iron railway wheel. The principle and its efficacy having been applied and ascertained, it remains to reach the utmost advantage by the necessary modifications and adaptations; to ascertain whether there should be two rings or only one; what should be the thickness of iron composing them; what form of section, whether round, square or otherwise; what should be the thickness of the rim enclosing them, and what should be their best position in the area of the cross section of that rim, &c. It is probable that a single ring to a wheel will be entirely sufficient, and that for a three feet wheel it should have a rectangular section equal in area to about the fourth part of a square inch.

The wheels now upon the Atlantic engine have rings in them, and they work and wear satisfactorily: and it is confidently believed that this discovery will be of great advantage in locomotive wheels as well as in those of passenger coaches drawn by steam power at high velocities, and that a wheel made after this manner might well be denominated *the safety wheel.* Whether for car-wheels in general, and of a diameter not extending about two and a half feet, the first or the second method of chilling, as already described, will be on the whole preferable, cannot now, perhaps, be fairly decided, but must probably be left to the lights of maturer experience.

From the improvements and modifications already made and matured, no doubt is entertained but that the company can have constructed in their own shops now constructed for that purpose, and for other objects connected with their railway machinery, locomotive engines of a very efficient and comparatively economical character, and more so, perhaps, than those of any other model hitherto imported from Europe. I do not hazard this sentiment from a mere feeling of partiality to the genius of our countrymen, but from a belief that the results will be fully realized. Notwithstanding, if it shall be thought proper, one or more English engines, of the most approved form and construction, might be imported and probably used with advantage upon the railway, now being made to Washington, inasmuch as, from the straightness of that road, an opportunity will there be afforded for a fair comparison between rival machines of this kind and of the most varied form.

Since the time of the last annual report, a second locomotive engine, built by Phineas Davis, was placed upon the road. This machine differed from the Atlantic engine in being lighter, and in the substitution of the crank axle, in lieu of the spur and pinion wheels, the position of the cranks being inside of the road wheels. The engine was calculated for the slower speeds, and was intended to be employed in the conveyance of commodities. The power of its traction was perhaps equal to that of the Atlantic engine, in proportion to the weight or the adhesion upon the rails, but the economy of fuel was probably rather greater in the Atlantic. Upon the whole the new engine was a good one, though somewhat inferior to the other. From some cause, the crank axle was broken, and a question arose whether it was not advisable in repairing the engine, to gear it in the same manner as the Atlantic, the performance of which had been very satisfactory. After mature deliberation, it was resolved to gear it by placing the pinion upon a shaft distinct from the axle of the road wheels, having connecting rods to cranks upon the shaft and axle *outside* of the wheels. This expedient of a separate shaft was adopted to obviate the damage that might occur to the spur and pinion from any jars or undulatory action of the road wheels, and since this engine was lighter than the Atlantic, and as much adhesive power would be needful in the traction of heavy trains upon the railway in the curves and ascents, it was furthermore deemed proper to avail of the adhesion of all the four wheels by means of outside cranks and connecting rods. A great, if not a vexatious delay has been experienced in procuring these repairs, although the work was confided to an establishment of good character and much business, but there is now a prospect of having it upon the road in the course of a few days. The performance of this machine will be seen with much interest, as it will test the advantage of several improvements which have been suggested and are introduced in its structure. The result will consequently have an important bearing upon the manner of arranging the working parts of the locomotive engines now about to be constructed.

It is not thought proper, on the present occasion, to travel over grounds heretofore occupied in the annual reports, as regards the motive power and machinery, or to repeat what is said upon this subject, in my report upon the routes of the proposed railway to connect the cities of Baltimore and Washington, already referred to as a document annexed to *this* report: it may, however, be mentioned, that our confidence in the use of steel springs for the burthen cars as well as for the passenger coaches, remains unabated; and that this subject, in common with others of utility in railways and railway machinery, has continued to claim our especial care, and the result will probably be, the fabrication and adoption of steel springs entirely efficient and very durable, the prime cost of which, inclusive of appurtenant fixtures, shall not exceed the one-third part of that of *leather braces*, or even of the springs of steel as hitherto made and used to sustain equal stress elsewhere.

No extension of the railroad having been made within the year just closed, there will be nothing to offer under that head; and the lettings upon the first Division of the Washington railroad are of such recent occurrence as not to require from me in this place any special mention or detail.

In the transportation department there has been a constant accession of business, both as regards the quantity of commodities carried, and the number of passengers conveyed, and there is every just ground to expect a continuance of increase of revenue from these sources, and an adequate remuneration for the expenditures incurred. It is probable that this desirable result will be realized in a shorter time from the commencement of the undertaking than has been experienced in most public works in our country, that have nevertheless proved highly successful and profitable. Much credit is due to the Superintendent of Transportation, William Woodville, for his vigilance, and for the degree to which he has economized the expenses in the department committed to his care, and we are assured, that these expenses will by no means increase in the ratio of the receipts. In connection with this part of the subject is the economy of passing the planes at Parr's ridge, hitherto effected with horse power, by the usual manner of working that animal on other parts of the road. As the tonnage of the transit augments, the economy of this power over that of steam, by fixed engines and the appropriate appendages, becomes more equivocal, and it is believed, that the time has nearly arrived when it will be proper to commence the erection of stationary engines. The transit over the inclined planes by these will doubtless be performed in a cheaper and much more convenient manner than with horses, when the accession to the trade and intercourse consequent upon the extension of the railroad to Harper's Ferry shall be realized. Estimates and comparisons will be instituted by this department upon this subject, and in due time reported with the necessary plans.

With regard to the extension of the Baltimore and Ohio Railroad from the Point of Rocks to Harper's Ferry, it may be remarked that the Chesapeake and Ohio Canal Company have located, and are engaged in the construction of the graduation of the Railroad through the narrow passes, comprising a distance of four and one-tenth miles, in pursuance of the compromise entered into between the Canal and Railroad Companies. A line of location for the railroad has likewise been traced and staked out under the directions of this department, by Caspar W. Wever, embracing the residue of the distance, and equal to about eight and one-fourth miles. This line met with my approbation, and was then submitted with the drawings to Alfred Cruger, Engineer and Commissioner on the part of the Canal Company, for his approval.

After conference and deliberation he proposed certain alterations in the line to render it acceptable on his part; to these alterations I acceded. Having thus come to a mutual understanding in a written correspondence, which was duly reported by me to thee, and the arrangement having been approved and sanctioned by the Board, will doubtless be likewise approved by the Canal Board, when no obstruction will exist to a consummation of the compromise in a speedy construction of the work to Harper's Ferry.

Surveys of the country between the city of Baltimore and the city of Washington have been continued with a view to perfect the location of the route for a rail road to connect those cities, and drawings, calculations and estimates, of several of the most feasible routes, have been made, and were reported on the 27th July last, for a more full account, in relation to which, see document W. R. annexed, and herein before referred to. The Board having decided in favor of the *upper route No.* 2, as combining the most advantages for a railway, such as is proposed to be formed upon a line of intercommunication of great importance, I have proceeded without delay, in obedience to thy instructions to that effect, to assign the definitive position of the line, and stake it out for contract. The first division, extending from the Baltimore and Ohio Rail, road to, and inclusive of, Merrill's Ridge, and the fourth division, extending from a point near Bladensburgh to the boundary line of the city of Washington, both together about eleven miles, were staked out for contract during the time of the pendency of the question with regard to a preference of the routes, these two divisions not having been involved in that question. In the execution of the final survey now mentioned, the first division has been much improved in its location by laying it upon ground requiring less masonry and much less excavation and embankment. The surveying party is now engaged upon the second and third divisions, comprising a distance of about eighteen miles, which will be prepared for contract in the course of a few weeks, or as soon as practicable. The surveys, levellings, drawings and calculations in relation to the routes for this railroad, have been conducted under my direction by B. H. Latrobe, assistant Engineer, whose services have been faithfully rendered and continue to be highly valuable.

Respectfully submitted, J. Knight.
Chief Engineer Balt. and Ohio Railroad.

Report of the Committee on Cars, to the Direction of the South Carolina Canal and Railroad Company, submitted 20th November, 1833.

The Committee on Cars, to whom was referred the several Resolutions of the Stockholders, requiring information on the following points, viz.:

1st. What is the cost of each locomotive, and from whom bought.

2d. The time of arrival of each locomotive from the period when contracted for.

3d. State the performance of each locomotive on the road.

4th. What derangements have taken place in the machinery, and the causes of such derangement, so far as has been ascertained, whether from bad materials, bad workmanship, or defect in the principle of construction.

5th. Have any, or what locomotives, been constructed on the plan of the English engines, and what has been the comparative performance of such.

6th. Have not the locomotives heretofore received been generally constructed upon the plan of English engineers, but with *supposed* improvements, suggested by our engineer; and have not such supposed improvements already failed in several instances.

7th. How many of them are now in use, and how many laid by for repairs.

Beg leave to report, that they have bestowed the best attention to the subject, that the limited time and other circumstances would permit. The Committee handed a copy of the subject matter referred to them to the Chief Engineer, in order to obtain from him such information as would aid them in their deliberations. The Committee also entered into a minute examination of the master of the works, the several engineers charged with the management of the four and eight wheel engines, and the superintendant of the repairs of the road, with the view of embracing more fully the obvious purport of the resolutions. The Committee submit the following replies to the queries:

To the 1st, 2d, 3d, 4th and 7th.

The following statement contains the names, contract prices, time when due, and time when put to work, of the several engines employed on the road:

1. Received Dec. 1830, Best Friend, 4 wheels, $4,000 00, due June 1830, put to work Dec. 1830.

2. Rec'd April, 1831, West Point, 4 wheels, $3,250 00, due January 2, 1831, put to work July 15, 1831.

3. Rec'd January, 1832, South Carolina, 8 wheels, $5,000 00, due January 15, 1832, put to work Feb. 24, 1832.

4. Rec'd March, 1833, Charleston, 8 wheels, $5,750 00, due Jan. 15, 1833, put to work Sept. 1, 1833.

5. Rec'd June, 1833, Barnwell, 8 wheels, $5,750 00, due Feb. 15, 1833, put to work, June 15, 1833.

6. Rec'd September, 1833, Edisto, 8 wheels, $5,750 00, due March 15, 1833, put to work, Sept. 11, 1833.

1st. The *Best Friend* had its boiler destroyed by explosion, June 1831. Her cylinder and working parts were made use of in the construction of the *Phœnix*, built by the Company in Charleston, the boiler of which is on the principle of the *Best Friend*. The arrangement of the machinery and boiler is different, having the cylinders working outside, and the weight much more equally distributed. This engine was put to work 18th Oct. 1832.

2d. The *West Point* was removed from the road 4th June, 1833, for the purpose of introducing an outside arrangement of her machinery, similar to that which has proved so successful in the Phœnix. This required a new frame, otherwise much wanted, and new wheels. The wheels have at length been received, and the axles are expected daily; the other work is considerably far advanced, but in consequence of a want of hands, nothing has been done on her for a considerable time,—the work is now resumed.

3d. The boiler of the *South Carolina* failed 27th December, 1832, and the engine not replaced on the road until the 10th April, 1833, when, after an ineffectual attempt to use her for some weeks, it was found necessary to construct new frames, which had always been too slight, and to alter the part of the boiler over the fire-place according to the plan adopted in the new eight-wheel engines, for which purpose the engine was taken off the road on 8th September, 1833, and it has not yet been in our power to effect this object, not having had a sufficient number of men to do much to her. Previous to the failure of the boiler, much trouble and delay had arisen from the breakage of her pipes, which difficulty was, however, completely overcome; and from the use of cast iron and wooden wheels which failed repeatedly, but have now been replaced with cast iron wheels with wrought iron tires. Her axles, too, were constructed of a much less perfect material and plan, and were broken several times. In replacing her on the road, no alteration is contemplated in the principle, it having given great satisfaction, and the working parts and arrangements having never failed in the least.

4th. The *Charleston* was received in April, 1833, but the boiler requiring and receiving additional workmanship on the part of the manufacturers, the engine was not put to work until the time named, Sept. 1833. This was the engine erroneously supposed to have failed in consequence of her small flues, but in fact the difficulty of her draught was entirely removed by making the smoke-stock and discharge pipes as they were originally expected to be. Very considerable work has been done on this engine by the hands of the Company, but chargeable to the contractor. It has been found necessary to make more perfect the connections between the frames and axles of this engine, and it has been done most effectually. Much trouble has been had with this engine, from the inadequate strength of her valve gearing, and it is intended to replace it with stronger as soon as it is in our power to do so.

5th. With the *Barnwell* there has been similar difficulties with the valve gearing, but not to so great an extent, as they are better proportioned, although not strong enough. The pumps of this engine have not always worked well, and when the use of water containing much sediment, rendered them still more inefficient, the flues were injured by permitting the water to get too low, and eventually, after an injudicious continuance to run her after a failure to supply, the flues were so much impaired by the heat as to render it necessary to have them taken out. The flues being large ones were put in with collars, and it has been necessary to take the boiler apart to put in new ones. The engine has been off the road since 20th September, 1833. Her new flues have been received and will be put in with rings, which will allow any tube to be replaced with little delay or trouble. The repairs will now go on as fast as our force will permit.

6th. The *Edisto* has performed very satisfactorily with the exception of breaking one of her wheels (in the centre of the hub) and two of the sidelegs which support the boiler. It is supposed that the wheel received some extraordinary strain, as other wheels of the same construction have with the other Engines given great satisfaction. The valve-gearing of this Engine is better proportioned than any of the others, but even in this, is not of that excess of strength which renders liability to failure exceedingly improbable.

To present at one view the manner in which the Road has been supplied with Engines for successive periods since the running of the West-Point alone on the Road, from June 1831 to Feb. 1832, when the South Carolina commenced running, we have as follows:

Feb. 24, to Oct. 18, 1832—8 months, 2 engines—West Point and South Carolina.

Oct. 18, to Dec. 27, 1832—2 months, 3 engines—W. Point, S. Carolina, Phœnix.

Dec. 27, 1832, to April 10, 1833—4 months, 2 engines—W. Point and Phœnix.

April 10, to June 4, 1833—2 months, 3 engines—Phœnix, S. Carolina, W. Point.

June 4, to Sept 1, 1833—3 months, 3 engines—Phœnix, S. Carolina, Barnwell.

Sept. 1, to Sept 11, 1833—10 days, 3 engines,—Phœnix, Barnwell, Charleston.

Sept. 11, to Sept 21, 1833—10 days, 4 engines—Phœnix, Barnwell, Charleston, Edisto.

Sept. 21, to Nov. 20, 1833—2 months, 3 engines—Phœnix, Charleston, Edisto.

It must be borne in mind, in looking at the above list, that all that have ever been put to work on the road, have been considered as at work, with the exception of the S. Carolina, taken off on account of failure of boilers, Dec. 28th, 1832, and again taken off, boiler being still unsound, and new frames being required, on Sept. 8, 1833.

Of West-Point, taken off to introduce new arrangement & frame, } June 4, "
Of Barnwell, taken off on account of injury to flues, } Sept 21, "

The *Hamburgh*, a four-wheel engine, constructed by the West-Point Foundry Association, according to the plan adopted by them from the one used on the Camden and Amboy road, which are after the approved English engines, with some alteration in her boiler, with a view to a more equal distribution of the weight, was received Oct., 1833, but is not yet put to work as one of the engines on the road, its axle having failed in the first three trials of the engine.

We have thus at work,—The Phœnix, 4 wheels—the Charleston, 8 wheels—the Edisto, 8 wheels.

[*To be continued.*]

Deduct for expenses below	858 62
Clear gain	$1324 19

Expended for feed, labor, seed, wear and tear, &c. as follows:

208 bushels corn, fed to pork and beef, at 4s.	$104 00
400 bushels potatoes to do. and other stock, at 17 cents,	68 00
200 bushels oats, fed to team and stock, at 3s.	93 75
24 bushels seed wheat, at 10s.	30 00
35 bushels seed oats, at 3s.	13 12
7 bushels seed peas, and 2 of rye, at 6s.	6 75
Seed corn, and plaster or gypsum,	15 00
Wear and tear, including mechanics' work,	60 00
Labor, one man at 16 dollars per month, as principal,	192 00
Two men at 14 dollars per month, for seven months each	196 00
Two boys at 30 dollars each, the summer,	60 00
Taxes	20 00
Total Expenses	$858 62

The hands all board themselves.

The clear gain is more than 15 per cent, calling all the improved land $40 per acre. The growth of the timber land will, at least, be 7 per cent. at the same price per acre.

Let no farmer, or farmer's son, rise from the perusal of the above plain and unvarnished statement, and say he is

> "Doom'd to tread the thorny ground.
> Where few, he fears, are happy found."

But let him feel and act as if agriculture, managed with system, and true economy, is the most profitable, most healthy, most honorable, and best calculated to raise our thoughts and aspirations of praise to that beneficent being who gives us wisdom to cast in the "appointed wheat, and vetches," and barley, in its place;" and let us honorably sustain the cause, by faithfully doing our duty, and we and ours will be blessed, and happy.

P. S.—Forgive the egotism, for one can scarcely speak of his own doings without it. A similar statement for the year 1832 lacks only $9 87 of being 15 per cent at $40 per acre. Respectfully, yours,

W. Taylor.

Charlton, Saratoga Co,
Oct. 25, 1833.

Remarks.—We are much pleased with the above communication, and hope we shall be favored with many similar to it.—[Ed.]

Recipe for Preserving Beef and Hams. By Carlo. [From the New-York Farmer.]

Mr. Fleet:—Take 12 lbs. of common salt, 4 oz. saltpetre, 1½ gallons molasses, or 12 lbs. coarse sugar, and six gallons water—mix intimately, and apply cold to one barrel of beef or hams.

This recipe is said to have been brought from Ireland about one hundred years ago, and has been in use ever since, for curing beef, smoked beef, and hams. It preserves the meat moist, and not over salt; and beef cured by it, after lying eight months in the pickle, has made good soup, having plenty of gelatin. The smoked beef never gets hard and bony, and the hams preserve much of their gelatin. The pickle, however, if kept till warm weather, should be drawn off, scalded and skimmed; 4 lbs. of salt, 1 oz. of saltpetre, and 1 gallon water added, and returned when cold.

In packing the beef, it should be cut in pieces not less than four, nor more than ten pounds, rubbed well with salt, and packed close in the barrel without any salt between the layers, and the pickle put on.

Yours, &c. Carlo.

November 16th, 1833.

Babbage on the Economy of Manufactures.

(Continued from page 696.)

315. The principal part of the hand-machines employed in the bobbin-net manufacture are worked in shops forming part of or attached to private houses. The subjoined list will show the kinds of machinery employed, and classes of persons to whom it belongs.

Bobbin-net Machinery now at work in the Kingdom:

Hand Levers—six-quarter, 500; seven-quarter, 200; eight-quarter, 300; ten-quarter. 300; twelve-quarter, 30; sixteen-quarter, 20; twenty-quarter, 1. Total, 1,351.

Hand Rotary—ten-quarter, 50; twelve-quarter, 50. Total, 100.

Hand Circulars—six-quarter, 100; seven-quarter, 300; eight-quarter, 400; nine-quarter, 100; ten-quarter, 300; twelve-quarter, 100. Total, 1300.

Hand Traverser, Pusher, Straight Bolt, &c. averaging five-quarters, 750.

Total, hand machines, 3501.

Power—six-quarter, 100; seven-quarter, 40; eight-quarter, 350; ten-quarter, 270; twelve-quarter, 220; sixteen-quarter, 20. Total, power machines, 4000.

Total number of Machines, 4501.

700 persons own, each, 1 machine; 226, 2 do.; 181, 3 do.; 96, 4 do.; 40, 5 do.; 21, 6 do.; 17, 7 do.; 19, 8 do.; 17, 9 do.; 12, 10 do.; 8, 11 do.; 6, 12 do.; 5, 13 do.; 5, 14 do.; 4, 16 do.; and 25 own 1192, or respectively 18, 19, 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 32, 33, 35, 36, 37, 50, 60, 68, 70, 75, 95, 105, 206. Total number of owners, 1382, holding together 4500 machines.

The hand workmen consist of the above named owners, 1000; and of journeymen and apprentices, 4000. Total, 5000.

These machines are distributed as follows:—Nottingham, 1240; New Radford, 140; Old Radford and Bloomsgrove, 240; Ison Green, 160; Beeston and Chilwell, 130; New and Old Sneuton, 180; Derby and its vicinity, 185; Loughborough and its vicinity, 385; Leicester, 95; Mansfield, 85; Tiverton, 220; Barnstable, 180; Chard, 190; Isle of Wight, 80; in sundry other places, 990. Total, 4500.

"Of the above owners, one thousand work in their own machines, and enter into the class of journeymen as well as that of masters in operating on the rate of wages. If they reduce the price of their goods in the market they reduce their own wages first; and, of course, eventually the rate of wages throughout the trade. It is a very lamentable fact, that one-half, or more, of the one thousand one hundred persons specified in the list as owning one, two, and three machines, have been compelled to mortgage their machines for more than their worth in the market, and are in many cases totally insolvent. This has chiefly arisen from the fall in prices of nets beyond the reduction in the prices of cotton and wages. This class of persons having become indebted to the cotton merchant, have been compelled to pay a comparatively excessive price for the thread they have used, and to sell their goods at the lowest prices of the market. Besides, their machines are principally narrow, and making short pieces, while the absurd system of bleaching, at so much a piece, goods of all lengths and widths, and dressing at so much all widths, has caused the new machines to be all wide, and capable of producing long pieces; of course to the serious disadvantage, if not utter ruin, of the small owner of narrow machines.

It has been observed above, that wages have been reduced, say 25 per cent. in the last two years, or from 24*s*. to 18*s*. a week. Machines have increased in the same time one-eighth in number, or from four thousand to four thousand five hundred, and one-sixth in capacity of production. It is deserving the serious notice of all proprietors of existing machines, that machines are now introducing into the trade of such power of production as must still, more than ever, depreciate (in the absence of an immensely increased demand) the value of their property, have a direct tendency to sink the small owners into journeymen, and either greatly increase the labor, or depreciate the workman's wages. It is a curious fact, as illustrative of the progress of machinery, that there are bobbin-net machines, which being worked by three men, six hours each, or eighteen hours per day, are turning off twenty thousand square yards of good net per annum. Now, it is not to be fairly denied, that such machines being multiplied to some extent, must, with only the actual demand, lower even the present trifling value of the sixteen hundred or seventeen hundred narrow hand-machines, one-half or more, and reduce the rate of wages of those who work in them one-third, and that of the remaining hand-machine workmen at least one-fourth; or, which is the same thing, compel them to increase their labor in the same proportion.

316. From this abstract, we may form some judgment of the importance of the bobbin-net trade. But the extent to which it bids fair to be carried in future, when the eastern markets shall be more open to our industry, may be conjectured from the fact which Mr. Felkin subsequently states, that "We can export a durable and elegant article in cotton bobbin-net, at 4*d*. per square yard, proper for certain useful and ornamental purposes, as curtains, &c.; and another article used for many purposes in female dress at 6*d*. the square yard."

317. *Of Patents.*—In order to encourage the importation, the improvement, or the invention of machines, and discoveries relating to manufactures, it has been the practice in many countries to grant, to the first introducers, an exclusive privilege for a term of years. Such monopolies are termed Patents; and they are granted, on the payment of certain fees, for different periods, from five to twenty years.

The following table, compiled from the report of the Committee of the House of Commons "*On Patents*," 1829, shows the expense and duration of patents in various countries:

Countries.	Expense. £	s.	d.	Term of Years.	Number granted in 6 years, end'g 1826—*Rep.* p. 243.
England	120	0	0	14	914
Ireland	125	0	0	14	..
Scotland	100	0	0	14	..
America	6	15	0	14	..
France	12	0	0	5	1091
	32	0	0	10	
	60	0	0	15	
Netherlands	£6 to £30			5, 10, 15	..
Austria	42	10	0	15	1099
Spain*—Inventor	20	9	4	15	..
" Improver	12	5	7	10	..
Importer	10	4	8	6	..

318. It is clearly of importance to preserve to each inventor the sole use of his invention, until he shall have been amply repaid for the risk and expense to which he has been exposed, as well as for the talent he has exerted. But the varieties in the degree of merit are so numerous, and the difficulties of legislating upon the subject are so great, that it has been found almost impossible to frame a law which shall not, practically, be open to the most serious objections.

The difficulty of defending an English patent in any judicial trial is very great; and the number of instances on record in which the defence has succeeded, are comparatively few. This circumstance has induced some manufacturers no longer to regard a patent as a privilege by which a monopoly price may be secured; but they sell the patent article at such a price as will merely produce the ordinary profits of capital, and thus secure to themselves the fabrication of it, because no competitors can derive a profit from evading a patent so exercised.

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* The expense of a patent in Spain is stated in the Report to be respectively 2000, 1200, and 1000 reals. If these are reals of *Vellon*, in which accounts are usually kept at Madrid, the above sums are correct; but if they are reals of *Plata*, the above sums ought to be nearly doubled.

319. The law of copyright is, in some measure, allied to that of patents; and it is curious to observe, that those species of property which require the highest talent, and the greatest cultivation—which are, more than any other, the pure creations of mind,—should have been the latest to be recognized by the state. Fortunately, the means of deciding on an infringement of property in regard to a literary production, are not by any means difficult; but the present law is, in some cases, productive of considerable hardship, as well as impediment to the advancement of knowledge.

320. Whilst discussing the general expediency of limitations and restrictions, it may be desirable to point out one which seems to promise advantage, although it is by no means free from grave objections. The question of permitting by law, partnerships, in which the responsibility of one or more of the partners is limited in amount, is peculiarly important in a manufacturing, as well as a commercial point of view. In the former light, it appears calculated to aid that division of labor, which we have already proved to be as advantageous in mental as it is in bodily operation; and it might possibly give rise to a more advantageous distribution of talent, and its combinations, than at present exists. There are in this country many persons possessed of moderate capital, not themselves enjoying the power of invention in the mechanical and chemical arts, but who are tolerable judges of such inventions, and who are also excellent judges of human character. Such persons might, with great success, employ themselves in finding out inventive workmen, whose want of capital prevents them from realizing their projects. If they could enter into a limited partnership with persons so circumstanced, they might restrain within proper bounds the imagination of the inventor, and by supplying capital to judicious schemes, render a service to the country, and secure a profit for themselves.

321. Amongst the restrictions intended for the general benefit of our manufactures, there existed one by which workmen were forbidden to go out of the country. A law so completely at variance with every principle of liberty ought never to have been enacted. It was not, however, until experience had convinced the legislature of its inefficiency, that it was repealed. When, after the last war, the renewed intercourse between England and the continent became extensive, it was soon found that it was impossible to discover the various disguises which the workmen could assume; and the effect of the law was rather, by the fear of punishment, to deter those who had left the country from returning, than to check their disposition to migrate.

ON THE EXPORTATION OF MACHINERY.

322. A few years only have elapsed since our workmen were not merely prohibited by act of Parliament from transporting themselves to countries in which their industry would produce for them higher wages, but it was forbidden to export the greater part of the machinery which they were employed to manufacture at home. The reason assigned for this prohibition was the apprehension that foreigners might avail themselves of our improved machinery, and thus compete with our manufacturers. It was, in fact, a sacrifice of the interests of one class of persons, the makers of machinery, for that of another class, those who use it. Now, independently of the impolicy of interfering unnecessarily between these two classes, it may be observed, that the first class, or the makers of machinery, are, as a body, far more intelligent than those who only use it; and although, at present, they are not nearly so numerous, yet, when the removal of the prohibition which cramps their ingenuity shall have had time to operate, there appears good reason to believe that their numbers will be greatly increased; and that it may, in time, surpass that of those who use machinery.

323. The advocates of these prohibitions seem to rely greatly upon the possibility of preventing the knowledge of new contrivances being conveyed from one country to another; and they appear to take much too limited a view of the possible, and even probable, improvements in mechanics. For the purpose of examining the question, let us consider the case of two manufacturers of the same article, one situated in a country in which labor is very cheap, the machinery bad, and the modes of transport slow and expensive; the other engaged in manufacturing in a country in which the price of labor is very high, the machinery excellent, and the means of transport expeditious and economical. Let them both send their produce to the same market, and let each receive such a price as shall give to him the profit ordinarily produced by capital in his own country. It is almost certain that in such circumstances the first improvement in machinery will occur in the country which is most advanced in civilization; because, even admitting that the ingenuity to contrive were the same in the two countries, the means of execution are very different. The effect of improved machinery in the rich country will be perceived in the common market, by a small fall in the price of the manufactured article. This will be the first intimation to the manufacturer of the poor country, who will endeavor to meet the diminution in the selling price of his article by increased industry and economy in his factory; but he will soon find that this remedy is temporary, and that the market price continues to fall. He will thus be induced to examine the rival fabric, in order to detect from its structure any improved mode of making it. If, as would most usually happen, he should be unsuccessful in this attempt, he will be forced to endeavor to contrive some improvement in his machinery, or to acquire information respecting that which has taken place in the factories of the richer country. Perhaps, after an ineffectual attempt to attain by letters the information he requires, he sets out to visit the factories of his rivals. To a foreigner and rival manufacturer such establishments are not easily accessible; and the more recent the improvement, the less likely he will be to gain access to them. His next step, therefore, will be to obtain the knowledge he is in search of from the workmen employed in using or making the machines. Without *drawings*, or an examination of the *machines* themselves, this process will be slow and tedious; and he will be liable after all to be deceived by artful and designing workmen, and be exposed to many chances of failure. But suppose he returns to his own country with perfect drawings and instructions, he must then begin to construct his improved machines: and these he cannot execute either so cheaply or so well as his rivals in the richer country; but after the lapse of some time, we shall suppose them to be completed and in working order.

Let us now consider what will have occurred to the manufacturer in the rich country. He will, in the first instance, have realized a profit by supplying the home market, at the usual price, with an article which it costs him less to produce; he will then reduce the price both in the home and foreign market, in order to produce a more extended sale. It is in this stage that the manufacturer in the poor country first feels the effect of the competition; and if we suppose that, from the first application of the new improvement in the rich country, and the commencement of its employment in the poor country, only two or three years elapse, yet will the manufacturer who contrived the improvement, even supposing that during the whole of this time he has made only one step, have realized so large a portion of the outlay which it rendered necessary, that he will now be in a state to make a much greater reduction in the price of his produce, and thus render the gains of his rivals quite inferior to those which his own ingenuity has produced for himself.

324. It is contended, that, by admitting the exportation of machinery, foreign manufacturers will be supplied with machines equal to our own. Now, the first answer to this argument which presents itself is supplied by almost the whole of the present volume, viz.: *That in order to succeed in a manufacture, it is necessary not merely to possess good machinery, but that the domestic economy of the factory should be most carefully regulated.*

The truth, as well as the importance of this principle, is so well established in the Report of a Committee of the House of Commons, "On the Export of Tools and Machinery," that I shall avail myself of the opinions and evidence there stated, before I offer any observations of my own:

"Supposing, indeed, that the same machinery which is used in England could be obtained on the continent, it is the opinion of some of the most intelligent of the witnesses that a want of arrangement in foreign manufactories, of division of labor in their work, of skill and perseverance in their workmen, and of enterprize in the masters, together with the comparatively low estimation in which the master-manufacturers are held on the continent, and with the comparative want of capital, and of many other advantageous circumstances detailed in the evidence, would prevent foreigners from interfering in any great degree by competition with our principal manufacturers; on which subject the committee submit the following evidence as worthy the attention of the House:

'I would ask whether, upon the whole, you consider any danger likely to arise to our manufactures from competition, even if the French were supplied with machinery equally good and cheap as our own?—They will always be behind us until their general habits approximate to ours; and they must be behind us for many reasons that I have before given.

'Why must they be behind us?—One other reason is, that a cotton manufacturer, who left Manchester seven years ago, would be driven out of the market by the men who are now living in it, provided his knowledge had not kept pace with those who have been, during that time, constantly profiting by the progressive improvements that have taken place in that period: this progressive knowledge and experience is our great power and advantage.'

"It should also be observed, that the constant, nay, almost daily, improvements which take place in our machinery itself, as well as in the mode of its application, require that all those means and advantages alluded to above should be in constant operation; and that, in the opinion of several of the witnesses, although Europe were possessed of every tool now used in the United Kingdom, along with the assistance of English artisans, which she may have in any number, yet, from the natural and acquired advantages possessed by this country, the manufacturers of the United Kingdom would for ages continue to retain the superiority they now enjoy. It is, indeed, the opinion of many that, if the exportation of machinery were permitted, the exportation would often consist of those tools and machines, which, although already superseded by new inventions, still continue to be employed, from want of opportunity to get rid of them—to the detriment, in many instances, of the trade and manufactures of the country; and it is matter worthy of consideration, and fully borne out by the evidence, that by such increased foreign demand for machinery, the ingenuity and skill of our workmen would have greater scope; and that, important as the improvements in machinery have lately been, they might, under such circumstances, be fairly expected to increase to a degree beyond all precedent.

(To be concluded in our next.)

NEW-YORK AMERICAN.

DECEMBER 7, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20—1833.

LITERARY NOTICES.

WALDEMAR, a Tale of the Thirty Years War, by W. HARRISON; 1 vol.; *Philadelphia*, CAREY, LEA & BLANCHARD.—Another of Leigh Ritchie's Library of Romance; but not one calculated to add much to the reputation of the series. If this tale of the Thirty Years War be indeed from the same hand as "The Diary of a Physician," that hand has lost much of its cunning. There is a poverty and barrenness of invention, and Munchausen degree of improbability in the incidents of the story, which are inadequately redeemed by occasional passages of strength and beauty. Not the least valuable part of the book, are the historical sketches of Tilly, Papponheim, Wallestein, and others, thrown into an appendix.

TRADITIONARY STORIES AND LEGENDARY ILLUSTRATIONS, by ANDREW PICKEN, author of the Dominie's Legacy; 1 vol.; *Philadelphia*, ED. C. MIELKE.—This volume is made up of two distinct stories, each one intended, and in our judgment well calculated, to illustrate, by practical results, a useful moral. On the whole we prefer, perhaps, the second and longer story, *The Priors of Lawford*, which is wrought out with great and painful interest and effect. From the shorter story, *Lady Barbara of Carloghie*, intended to exemplify the evil of ill assorted macthes, we had marked an extract, which would fully justify our praise of this volume; but the demands of this busy political season, force us to exclude it—at least for to-day.

THE DUCHESS OF BERRI IN LA VENDEE, by GENERAL DERMONCOURT; 1 vol.: *Philadelphia*, CAREY, LEA & BLANCHARD.—Madame *Luchesi Palli* has certainly very much disenchanted the adventures of the Duchess of Berri, by teaching the world to overlook the daring of the heroine, in the frailties of the woman. Yet the courage, the fortitude, and the cheerful and confident spirit with which this slight and delicate Princess—whom even the breath of Heaven had not been permitted before to visit too roughly—encountered and overcame the greatest exposure, hardships and perils, in her absurd and illjudged, but daring attempt to rouse La Vendee into insurrection, are fitted to call forth wonder and admiration. They are recorded, too, with accuracy and fidelity by an enemy; for her biographer in this instance, is the General of Louis Philippe, who commanded in the district and succeeded in capturing her. He has made of it an attractive story.

THE SKETCH BOOK OF FASHION, by the author of Mother and Daughter. 2 vols. *New York:* HARPER & BROTHERS.—A collection of stories, which the author calls "laughing satires," but which sometimes have a very cynical laugh, is here presented; intended to point out, and by pointing out to correct, some peculiar vices of the higher class of society in England. They are written with ease, with spirit, and frequently more with a caustic, than a sportive pen. We are so pressed however, for room, at this moment—fraught as it is with even more than the usual supply of speeches, reports, and counter reports—that we have no room for any extracts.

THE LITTLE RECKONER, by RICHARD W. GREEN. *New York:* McELRATH, BANGS & CO.

PETER PARLEY'S ARITHMETIC, with Engravings. *Boston:* CARTER, HENDEE & CO.

Both these little school books aim at facilitating the usually repulsive study of arithmetic to beginners. The first is intended for children younger than those to whom "Colburn's first lessons' are intelligible, and begins with the very a, b, c, as it were of mental arithmetic. *Peter Parley*, in addition to the simplicity with which he inculcates each lesson, presents it in the form of a story, which in its turn is illustrated by a picture; thus seeking to make this study an amusement. Both make use of familiar objects in order to impress the mind through the eye with the value and relation of numbers—as for instance, three beans, four hats, six stars, &c. &c. Of the two books, that of *Peter Parley* is, from the form in which the lesson is conveyed, and from the engravings by aid of which it is more forcibly impressed, to be preferred.

Q. HORATII POEMATA, with Notes and Explanations; by CHAS. ANTHON, Jay Professor in Columbia College. 1 vol. 8vo. *New York:* G. & C. & H. CARVILL.—Professor Anthon published in 1830, an edition of Horace, in which the notes, critical dissertations, conjectural amendments, and historical illustrations—learned far beyond the ordinary reach or demand of American scholarship—swelled the work to a size that rendered it both too dear and too large for ordinary use. In the edition before us, we have the same carefully printed text, with a large body of notes, thrown into an appendix, and which embrace those topics only connected with the poetry of Horace, which are essential to the preper understanding and enjoyment of it. All that relates to metre, and such explanations as serve to remove difficulties in the allusions, and indeed structure, of these poems, are carefully preserved, so as to render this edition a very useful and valuable one to all learners, as well as to those who, having learned, preserve the taste, and sometimes find the occasion to look back with pleasure at a school book.

SCENES OF AMERICAN WEALTH AND INDUSTRY. Boston: ALLEN & TICKNOR.—This is really a very pretty picture book with a great deal of useful information about our own country, its manufactures, trade, and agriculture, well calculated both to amuse and instruct youth. Taking each State in succession, the employments and occupations peculiar to, or chiefly followed in, that State, are explained; with many engravings, representing now some process of manufacture, now of agriculture; sometimes the view of a town, as Pittsburgh and Cincinnati; sometimes of scenes in the far West. After going through the States, there are several chapters devoted to Mexico and South America, prepared with equal care and accuracy. It is a little book quite calculated to stimulate and enlighten the curiosity of youth.

LETTERS OF MAJOR JACK DOWNING. *Boston.*—A friend thus writes to us concerning this publication:

We have run over the pages of this book with a considerable share of amusement; but we must confess our disappointment at not meeting in it various letters of the Major, to which alone we were first indebted for a knowledge of and attachment to his character and writings. We find, on tracing dates, that this distinguished personage was a writer of no inconsiderable power in his own State for two or three years before we ever heard of him. This was entirely owing to his writings being of almost an exclusively local character, but not the less meritorious. But when he joined the "Gineral" on the *grand tour*, we began to recognize him as a public character of no little importance. His letters then met us in the columns of the New York Daily Advertiser, and carried with them such palpable evidences of identity, we could not for a moment doubt their being from the "*genewine critur*," and we discarded all others.

The Boston publisher, it seems, in the Appendix to the book, embraces some of the letters which originally appeared in the New York Daily Advertiser, and which are said to be letters the Major never wrote. The Major, however, contradicted this some time ago; and we are inclined to side with him, and believe that he wrote all the letters published under his name in the New York Daily Advertiser, and which, with the Major's permission, we pronounce his best. And we repeat our belief, and the Boston book will, we think, bear us out in the remark, that but for the Major's letters, published originally in the New York Daily Advertiser, and republished with the greatest avidity in almost every newspaper in the country, the Major would not have been by any means recognized as he now is, as one of the first confidential advisers that ever stood between a people and their ruler. The Major is evidently a favorite of the people, and by his own showing (in which we trust he is not mistaken); he stands unrivalled in the estimation of the President; and has so ingeniously placed himself as to defy any power, Legislative, Executive or Judicial, to oust him from his position.

JOURNAL AND LETTERS FROM FRANCE AND GREAT BRITAIN BY EMMA WILLARD. 1 vol. *Troy, N. Y. N. Tuttle. New York, John Leavitt.* Originally written for a private circle and not intended for publication, this Journal is, nevertheless, now sent forth to the world from motives of philanthropy; to aid by any profits derived from the sale of it, the cause of female education in Greece. This consideration, and the fact, that the Journal is from the pen of a lady who has done good service herself, to the cause of female education at home, entitle the work as much to the indulgence, as to the patronage of the public. It is not, therefore, with the view of disparaging the book, but rather for the purpose of making it the occasion of stating some general propositions as to what seem to us among the first duties of a tourist, that we shall now tax the attention of our readers by a few remarks.

In assuming to judge of a foreign country, foreign in its language, usages, religion, and laws, such as France is to the great mass of Americans, there is always great danger of adopting hasty conclusions by reason of the false medium which we look through. Owing to the identity of our language and that of England, our reading, respecting other countries, is in English books; from them we derive not facts alone, but opinions, prepossessions, prejudices. We look in short at the rest of Europe, and of the world, indeed, through English glasses, which, like those tha *Major Jack Downing* supposes to have been furnished "to our venerable President" by a distinguished political Seer, present all objects, not as they really are, but as it is the interest of the spectacle maker, that they should appear. Hence it seems to us specially obligatory on an American visiting France, to distrust first impressions, to keep perpetual guard upon the prejudices, which the striking difference in all the modes of living in that country from those he is accustomed to see at home, so readily excites, and particularly to avoid generalizing from isolated facts or occurrences. In these points we think the writer of this Journal, has been incautious; her judgment is too soon made up, and her opinions emitted with two little examination and qualification; she passes upon the scenery, and we believe, agriculture of France, as compared with those at home, by the time she leaves Rouen, on the road from Havre to Paris. She pronounces upon the morals of French society, after a few weeks residence in Paris, and herself speaking the language of the country, as she apprizes us, imperfectly. Thi can only be accounted for, as we apprehend, on the hypothesis of certain preconceived notions about French people and French habits, derived, as above intimated, possibly from English books; hence those appearances only were noted which seemed to tally with such notions, and thus all objects were in a measure prejudged. Now on the score of the domestic relations in France, concerning which, we have heard and read so many flippant things (we do not apply these expressions to the Journal now before us) from English and American tourists, who make up their opinions from what they see or hear in Paris, we may from a residence of some years at different periods of life in France, claim to speak with knowledge, when we say, that in no country in the world, so far as we know, is the intercourse between parents and children, husband and wife, brothers and sisters, masters and servants, and between neighbor and neighbor without reference to rank or fortune, on a more delightful or affectionate footing than in France. The very terms of the language, the endearing *tutoiment*, (using the second person singular instead of the second perron plural,) which always obtains in the domestic circle, both towards relatives and family servants; the claim which one's neighbor, *mon voisin*, has almost as a matter of course to general kindness, and to aid, if necessary, the devoted attachment of children to parents, and the confidential footing of equality upon which they live together: all this belongs eminently to domestic relations in France; and knowing such to be the case, it is always with regret, and sometimes with indignation, that we read sweeping and indiscriminate censures levelled against the moral condition of French society, and founded—if founded at all—upon the licentious exceptions which every great city, and probably Paris, from its being the European metropolis, more than any other, presents.

We do not make these remarks now, because we consider that Mrs. Willard has, more than others, fallen into the error of these general, and therefore unjust, conclusions; but because, from the merited influence of her name, we feared that what she does say on these subjects would have greater weight than the more erroneous but less considered assertions of others; and therefore we desired to put our readers at least upon their guard.

Boys and Girls' Library of Useful Knowledge, Vol. XVIII. New York: Harper & Brothers.—We have here Part III of Sunday Evenings; or an Easy Introduction to the reading of the Bible. In these pages the stories of the Bible are told separately, and in detail. There are also engravings representing some of the striking incidents of each, all calculated to fix the young reader's attention.

The Child's Annual. Boston: Allen & Ticknor.—This is a really pretty and useful little volume, adapted to young readers, and with wood-cuts scarcely inferior to engravings. The contents are varied and instructive, partly original and partly selected; and such as may be read with amusements and advantage.

A Volume from the Life of Herbert Barclay. Baltimore: Wm. & Jos. Neale.—A fairly printed volume, in fine large type, is a temptation in itself; and one that, in the rage for condensing now so prevalent, is somewhat rare. Thus induced, we cheerfully read through these pages; and find in them much good sense conveyed in rather ambitious style, and with a sad itching after figurative and rotund periods. There is nothing that is very original, and a good deal that is dull and commonplace, in the views here given of society, and of the course and feelings of a young man, such as Herbert Barclay is represented: yet, upon the whole, the tone and tendency of the book are good. It is, too, an American book, and treats of American society.

The Note-Book of a Country Clergyman. New York: Harper & Brothers.—A reprint, we take it, from the context, of an English book. The stories are sad, and like enough to reality to pass for truth; yet they want the freshness and impress of life, which distinguish those of "Scenes in our Parish;" which, in their general character, nevertheless, and in the moral and religious lessons they inculcate, they resemble. To the story of the Confession, however, we object, as all but incredible in the main incident upon which it turns.

Works of Miss Edgeworth, Vol. IX. *New York:* Harper & Brothers.—With this volume the series of Miss Edgeworth's admirable Tales and Novels is completed, and it is only just to the publishers to say, that in thus giving to us an edition cheap and handsome in a remarkable degree—*nine* large and well printed octavo volumes for *six* dollars—they have entitled themselves to a liberal patronage. It has been well suggested that as "holiday presents," few books of the sort could be more judiciously presented.

Illustrations of Political Economy, by Harriet Martineau, Nos. I. to VIII. *Philadelphia*, E. Littell.—We have already, on several occasions, borne our testimony so strongly to the talent and the tact with which Miss Martineau succeeds in imparting to a naturally *dry* subject, the charm and attraction of amusing stories, that we have only now, on the appearance of this new edition of these illustrations, to bid them warmly welcome, and to express the hope that the publisher may find it his interest to continue the series, as we are sure readers of all ages and pursuits will find both pleasure and instruction in perusing them.

Elements of Plane and Spherical Trigonometry, &c. &c., by F. R. Young, *with some original researches in Spherical Geometry*, by F. S. Davies, F. R. S. E. &c., revised and corrected by J. D. Williams. *Philadelphia*, Carey, Lea & Blanchard.—The merit of such a republication as this of a book of established reputation, must consist much in its accuracy and scrupulous correctness; that merit is claimed for this edition by Mr. Williams, and in all other respects of typography and paper, it is unusually well got up.

The New England Magazine, for December.—Boston, J. T. Buckingham.

The American Monthly Magazine, for December. New York, M. Bancroft.

The Knickerbocker, for December. New York, Peabody & Co.

The U. States Naval and Military Magazine. Washington, B. Homans.

American Turf Register. Baltimore, J. Skinner.

Museum of Foreign Literature, &c. Philadelphia, J. Littell.

Revue Francaise. No. II. New York, Hoskins & Snowden.

Amidst the busy hours which the requisite attention to the proceedings in Congress, and the various State Legislatures do, at this season, impose upon us, we are always glad to turn for a while to the more tranquil attractions of our periodical literature. Of the magazines for this month, we have not, however, yet been able to read more than portions here and there; but enough generally to satisfy us, that upon the whole they are only average numbers, not marked by any striking excellence this month.

We have room only for a single extract, and that from the magazine at the head of the list. It is a description, eloquently written and felt, of a statue by our countryman Greenough, of *Medora:*

The statue of Medora is modeled from Byron's description in the Corsair.

> In life itself she was so still and fair,
> That death with gentler aspect withered there;
> And the cold flowers her colder hand contained,
> In that last grasp as tenderly were strained
> As if she scarcely felt, but feigned a sleep,
> And made it almost mockery yet to weep;
> The long dark lashes fringed her lids of snow,
> And veiled—thought shrinks from all that lurked below—
> Oh! o'er the eye death most exerts his might,
> And hurls the spirit from her throne of light!
> Sinks those blue orbs in that long last eclipse,
> But spares as yet the charm around her lips—
> Yet, yet they seem as they forebore to smile,
> And wished repose—but only for a while;
> But the white shroud, and each extended tress,
> Long—fair—but spread in utter lifelessness,
> Which late the sport of every summer wind,
> Escaped the baffled wreath that strove to bind;
> These—and the pale pure cheek became the bier—
> But she is nothing—wherefore is he here?

Beautiful poetry this! But go, reader, and gaze on the sculptured marble. The artist has surpassed the poet. Taking his general idea from Byron, Greenough has wrought it into a form of loveliness, and given it a tenderness, a pathos, a deep and solemn beauty, before which the gayest talker and the most frivolous laugher are silenced in a moment. No loud tones have been heard in that sad presence. It is the abode of death in the perfection of melancholy beauty. Criticism is hardly possible. The deepest emotions of the heart are moved, and we come away with a sober and chastened feeling, and with an image of soft and gentle loveliness impressed upon the soul, which will abide there forever.

The chiseling of this beautiful piece is beyond praise. In the most subordinate particulars, it is finished with exquisite delicacy. The soul of the artist was in the work, and animated every part of it. The repose of the attitude, the sweetness of the expression, the flow and transparency of the drapery, are as near perfection as they can be. The wavy hair floats over the pillow in gentle undulations, wrought with the finest delicacy of handling. Every part of the form, the lines of the mouth, position of the head, the contour of the neck, the bust, the arms, the hand holding the flowers, and the draped limbs, are rendered with the utmost skill, harmony, chasteness and proportion. Before the beauties of this achievement of cultivated genius, description faulters. We borrow a few lines from Lord Byron, which, by a slight change of application, more closely illustrate this piece than the passage from which it was professedly taken.

> He who hath bent him o'er the dead,
> Ere the first day of death is fled;
> The first dark day of nothingness
> The last of danger and distress;
> (*Before Decay's effacing fingers*
> *Have swept the lines where beauty lingers*)
> And marked the mild angelic air—
> The rapture of repose that's there—
> The fixed yet tender traits that streak
> The languor of that placid cheek
> And—but for that sad shrouded eye,
> That fires not—wins not—weeps not now—
> And but for that chill changeless brow
> Where cold obstruction's apathy
> Appals the gazing mourner's heart
> As if to him it could impart
> The doom he dreads yet dwells upon—
> Yes—but for these and these alone
> Some moments—ay—one treacherous hour
> He still might doubt the tyrant's power,
> *So fair, so calm, so softly sealed*
> *The first, last look, by death revealed.*

We have been told by gentlemen, who have visited Mr. Greenough's studio, in Florence, that Homer is his constant companion. The beautiful simplicity, and the vivid, *animating* genius of this poet, in whose verse the personages of the scene stand distinctly before the reader's eye, with the perfect outline and fully-developed form of statues, is a singularly appropriate teacher for the sculptor. In his poetry, there is nothing grotesque, exaggerated, or unnatural; but there is much that is supernatural or ideal. In this, Homer differs much from other early poets;—Dante, for example, whose immortal work is full of the most strange conceptions;—and in this respect, too, Homer, rather than any other poet, should be in the hands of the sculptor. Homer was the copious fountain from which the ancient artists drew their conceptions of simplicity and beauty. When Phidias was asked whence he derived the idea of the Olympian Jupiter, he replied by quoting the famous lines in the Iliad, which describe the Father of Gods and Men as shaking Olympus by his nod; and an ancient critic remarked, that this statue was so wonderful and sublime, that Jupiter himself must have revealed his form to the vision of the artist.

It is a pleasant thing to contemplate a young American following the same career with the great men of antiquity. The bard of Chios teaching a native of the western world the same lesson of truth, and beauty, and grandeur, that he taught of old in the schools of Athens, must excite the dullest mind to a train of agreeable reflections.

Mr. Greenough has evidently benefited very much by his classical taste in literature. He is perfectly free from fantastic ornaments, and tasteless trickery; he shows a preference of the pure and the simple over the gaudy and ornate; he confines himself strictly to the legitimate objects of his art, and now bids fair to rival the first masters in tenderness and grace, in propriety and dignity, in chasteness of design, and perfectness of execution. How far he will succeed in works of a more stern and sublime character, his countrymen have as yet had no opportunity of judging. In a few years we shall all have the privilege of seeing with our own eyes. To embody in enduring marble the imposing form of the FATHER OF HIS COUNTRY is a work which the proudest genius should deem itself happy in accomplishing.

The Dominie's Legacy, by Pickens, 2 vols. *Philadelphia:* Carey, Lea & Blanchard.—It was only last Saturday that we had occasion to express our admiration of the late work, and in some sort a sequel to this now republished, of Mr. Pickens. We merely add now, therefore, that those who may have read the sequel, will in that have found motive enough to possess themselves of these, the original volumes.

Among forthcoming works, we understand that the "History of the Hartford Convention, by Theodore Dwight," will appear early next week. It will, we are quite sure, be eagerly sought, for many reasons.

The letter of H., with which we conclude, describing the field of Braddock's defeat and Washington's early fame, will interest our readers:

November 10th.

It was a bright bracing autumnal morning as I rode out of Pittsburg, with a party of gentlemen for "Braddock's field." Our route followed the course of the river; sometimes keeping the rich bottom on its borders, and again ascending a hilly ridge which always commanded some varied view of that stream, conducted here by steep hills, whose shadows met as they slept upon its quiet bosom, and expanding there into a small lake, apparently so completely landlocked that it seems not a part of the bright current you can see flashing through through those meadows further on. After catching more than one glimpse like this of the landscape behind us whose sunny fields contrasted beautifully with the dense smoke of Pittsburg in the back ground, we struck into a ravine cutting the road hitherto pursued at right angles. Winding now thro' a deep dingle where the pathside was festooned with vines, we crossed a small brook and reached the shore of the Monongahela opbosite to a broad alluvial flat, whose high cultivation and sunny aspect contrasted vividly with the wild and secluded dell from the mouth of which we beheld it. The road next led for ot some distance through a wood on the immediate bank of the river, and then gaining the more public highway, we found ourselves, after passing several comfortable farm houses, immediately in front of the battle ground.

It is cut up now by three or four enclosures, —the field upon which the fight was hottest lying nearly in the centre, bounded on one side by the road, and having its opposite extremity about a quarter of a mile from the river, with a wooded flat intervening. Beyond this flat is the ford over which Braddock passed. The ground about three hundred yards from the ford rises in a gradual slope for some two hundred yards more, and then swells suddenly into a tolerably steep hill, the summit of which may be half a mile from the river. On the middle slope lies the central field of action, to which I have already alluded. It is seamed with two shallow ravines, which run parallel with each other towards the river, and are about gunshot apart.

In these ravines, concealed by the underwood, and protected by the trunks of trees felled for the purpose, lay the French and Indian force. It amounted, according to the best accounts, to only 500 men, and was commanded by a subaltern officer, who suggested this ambuscade as a desperate expedient to save Fort Du Quesne, from the overwhelming force that was about to invest it. The road of Braddock lay immediately between these enfilading parties.

It was about midday when he passed his troops over the river in detachments of two hundred and five hundred, followed by the column of artillery, the baggage, and the main body of the army commanded by himself in person. The latter had hardly time to form upon the flat below, when a quick fire in front told them that the two detachments which had gained the first slope were already engaged. Their comrades advanced in double quick step to sustain them; but the whole five hundred gave way, and falling back upon the advancing troops, struck panic and dismay throughout the ranks in a moment. The confusion seemed for a while irremediable. Some fired off their ammunition without aim or object, and others deaf to the commands and exhortations of their officers, flung away their arms and gave themselves up at once to despair.

Burning with the disgrace, and eager to shame their soldiers into better conduct, the British officers advanced singly and in squads among the bullets of the enemy. They were slaughtered indeed like sheep, but their men, whose retreat had been partially cut off by the river, rallied at the galling sight, and, after the cool determination of young Washington, who had already had two horses shot under him, and his clothes pierced with bullets, had imparted some steadiness to their feelings, they seemed ready to protract the fight to the best advantage. The madness of Braddock, however, whose weak mind took fire at the idea of receiving a lesson from a provincial youth of three and twenty, destroyed every remaining chance of success. He insisted upon his men forming on the spot, and advancing in regular platoon against an enemy which none of them could see. Line after line, they would hardly attain a pace between the fatal ravines before they would be mowed down like grass. But their courage was now up, and, though broken and in some disorder, they attempted, with courageous pertinacity, to secure each step they gained by protecting themselves behind the trees, and returning the murderous fire of the foe after his own fashion. The military coxcomb who commanded this ill-fated band would not hear of this. He stamped, raved, and swore, called his men cowards, and struck them with his sword. In the meantime, an evolution was being executed, n anotherpart of the field, which might yet have turned the fate of the day. Capt. Waggoner, of the Virginia forces, pushed his fine corps, consisting of 80 men, beyond the voice of his besotted commander, to the summit of the hill, with the loss of only three men, in running the fearful gauntlet he did to attain that position. A fallen tree here protected his brave little force, and enabled him to rake the ravines which lay at right angles to his natural breastwork to great advantage. But the Virginians were mistaken by their English friends below for a new enemy, and fired upon so furiously that they were compelled to retreat from their position with the loss of two-thirds of the corps killed by their misguided comrades. Thus was the strife protracted for nearly three hours, when the fall of Braddock, after losing 700 men and 40 officers, put an end to the blind conflict. Fifteen hundred men, being thrice the number of the foe engaged, escaped to tell the havoc of the day, and spread consternation and horror throughout the provice.

The military chest of the British, containing 25,000 pounds, fell into the hands of the enemy, as did likewise an extensive train of artillery, with ammunition and provisions to a large amount. Among those who perished on this disastrous occasion, were Sir William Shirley, a son of the Governor of New York, and Sir Peter Halket, with one of his sons, and other officers of distinction or promise. Sir John St. Clair and Lieut. Colonel Gage, afterwards well known in our revolutionary history, were among the wounded. Many of the officers fell at the first onset, but Braddock himself had advanced some distance up the hill when he received the mortal wound of which he died a day or two afterward. The stump of the tree against which he leaned after being struck, is still pointed out in a wheat field above the highway. He was carried off, as you recollect, by the flying troops, and dying with many others on the march was buried beneath the road over which his men were retreating.

The letters of Horace Walpole, recently published, have thrown a light upon Braddock's character that should put an end at once to all the forbearance that has hitherto been exercised in commenting upon his share in this bloody transaction. The misfortunes of the hot and misguided, but high-bred and gallant soldier, were to be touched upon with lenity. The selfish rashness and utter destitution of military capacity of the broken down gambler should be stigmatized as they deserve. Yet it is not from Walpole alone that we learn what a presumptuous blockhead England sent hither to mend his ruined fortunes, at the risque of the best blood in the country. For, though history has dealt so leniently with his character, the records of those times paint the man in his true colors, and so gross was his ignorance, and so offensive his pride, that he seems to have been hated and despised from the moment he assumed the command of the forces destined hither. The interest with which I viewed the battle-ground, has kept me all the morning looking over a mass of documents relating to those times, and, as they are still before me, I am tempted to make more than one extract. "We have a general," writes the brave and accomplished Sir William Shirley, from the camp at Cumberland, to his friend, Governor Morris, at Philadelphia, "we have a general most judiciously chosen for being disqualified for the service he is employed in, in almost every respect. I am greatly disgusted at seeing an expedition, (as it is called,) so ill concerted originally in England, so ill appointed, and so improperly conducted since in America. I shall be very happy to have to retract hereafter what I have said, and submit to be censured as moody and apprehensive. I hope, my dear Morris, to spend a tolerable winter with you at Philadelphia." Poor Shirley, he never saw that winter. He was shot through the brain at the very commencement of the battle.

There is a lively comment on this letter in the well known reply of Braddock to the prudent suggestions of Washington previous to the battle:—"By G—d, Sir, these are high times, when a British General is to take counsel from a Virginia buckskin."

But the speech of an Indian Chief before the council of Pennsylvania, preserved among the records of Harrisburgh, offers an illustration still more striking. "Brothers," said the sagacious ally of the colonists, "it is well known to you how unhappily we have been defeated by the French on Monongohela. We must let you know that it was of the pride and ignorance of that great General that came from England. He is now dead; but he was a bad man when he was alive. He looked upon us as dogs, and would never hear anything that was said to him. We often endeavored to advise him, and to tell him of the danger he was in with his soldiers. But he never appeared pleased with us, and that was the reason that a great many of our warriors left him, and would not be under his command. Brothers, we advise you not to give up the point, though we have in a measure been chastised from above. But let us unite our strength. You are very numerous, and all the Governors along your eastern shores can raise men enough.—Don't let those that come over the great seas be concerned any more. They are unfit to fight in the woods. Let us go by ourselves—*we that come out of this ground.* We may be assured to conquer the French." The military counsel and support of this intrepid and high-souled Chieftain would have been heard at least, even if it did not prevail, in the camp of Napoleon. Does it not make you indignant to think how it was trampled upon and insulted by such a creature as Braddock? One would have thought that the insolent spirit of the London debauchee would have felt rebuked into nothingness before the genius of the warrior of the woods. But let the man rest; he had that one virtue to which all weak minds bow—courage. And he had the Hessians, that in a subsequent war were bought to fight against us for eighteen pence a day. May we rather meet, again and again, such brave mercenaries in battle, than be marshalled once to the fight by a leader, whom even valor cannot shelter from deserved contempt.

The field of this celebrated action presents of course a very different appearance from what it did when Braddock's followers were here hunted through the forest. It is however but a few years since the wood was cut from the side-hill, and traces of the conflict are still occasionally discovered in the grove along the margin of the river below. I was told too that bones and bullets, with rusted knives, hatchets and bayonets, were sometimes even yet turned up by the plough in the spot where the fight was hottest. This central field was cleared about 17 years since. It was heavily timbered at the time, and they tell in the neighborhood that the teeth of the saws in the mills adjacent were continually broken upon the balls imbedded in the ancient trees. Incredible quantities of human bones and rust-eaten weapons are said to have been found beneath the surface of the soil, when the plough first invaded this memorable wood. I picked up a bone myself, which my horse's hoof disengaged from the soil, but my skill in anatomy not being sufficient to determine whether it was even human or not, I returned the mouldering relic to the dust, of which it was rapidly becoming a part. It was an animated and interesting hour's amusement, after our party had taken down the intermediate fences, which were too high to clear, to gallop over the whole battle-ground, and survey it from every point. A prettier spot to fight on never greeted the eye of a soldier. The undulations of the field are just sufficient to exercise a nice military discrimination in the choice of position, while the ground is yet so little broken that cavalry might act on any part of it to advantage. The centre of the battle-field would command a fine view of the river, were but a vista or two cut in the wood below; and even now it offers a beautiful seite for a private residence, and would, with the lands adjacent, make a noble park. There are a few superb oaks still standing at the foot of the slope, which might constitute a lawn, and—what must enhance the value of the place with all faithful ghost-believers and pious lovers of the marvellous—the dim form of the red savage, with a ghastly spectre of his pallid victim shrieking before it, it is said may be seen gliding at times among these hoary trunks. The exorcising light of noon most perversely shone down among them while I lingered near the spot, but I could fancy that the November wind which sighed among their branches was charged at times with a wailing sound, such—such in fact as an orthodox tree in a perfect state of health would never make of its own accord.

Returning home, one of the party proposed stopping at a gentleman's house in the vicinity, where a number of articles picked up from the field were said to be collected. Not a soul of us knew the proprietor of the establishment, and it would have amused you to see the effect produced upon its inmates, whom I soon ascertained to be a large collection of boarding school young ladies, by our formidable descent upon the premises. We were asked into a handsome parlor, and in about fifteen minutes our host appeared. A gentleman of our number, whose western frankness of manner and ease of expression made him the most suitable spokesman at such an awkward meeting, opened the preliminaries, and apologizing for our unceremonious intrusion revealed our character as relic hunters. The stranger host, overlooking the absence of "sandal shoon and scallop shell," welcomed us at once, with the same politeness that pilgrims have ever received in civilized countries, and regretting that he had not even enough of the "true cross" to swear by—not an atom of a relic—sent us home to our supper with appetites considerably sharpened by the disappointment.

Returning, I diverged with one of the company from the direct road a little, to take a look at the United States arsenal. It lies on the banks of the Allegany, and consists, together with the officer's quarters, of a number of handsome brick buildings painted cream color, and so arranged with regard to each other, as that in connexion with the improved grounds adjacent, they make quite an imposing appearance.

It was nearly dark when we got fairly into town, where the dust and smoke along the streets, with the rattling of drays returning from their day's work to the suburbs, reminded me not a little of my own bustling city at night-fall. There is one sound, however, in the streets of Pittsburg, which utterly forbids a stranger mistaking them for those of any other town on the continent. It is the ceaseless din of the steam engines. Every mechanic here of any pretension has one of these tremendous journeymen at work in his establishment. They may be purchased for what would be the price of a pair of horses in New-York, and it costs a mere song to keep them in fuel. These machines must do the work of a great many thousand men at Pittsburg; and though I am hardly such a friend of universal suffrage as to think that these substitutes for men ought to be represented in the legislature, yet, upon my word, they should always be taken into consideration when estimating the population of the place, which their industrious labor renders so flourishing.

"Proud deeds these *iron men* have done."

FOREIGN INTELLIGENCE.

Later from Europe.—By the packet ship *Europe*, from Liverpool, we have London papers to and of the 16th ult. which, though later by nine or ten days than our previous accounts, furnish little of political interest. The commercial accounts will not be found very encouraging.

A Treasury order for 8,000*l.* has been presented to Capt. Ross for his discoveries in the north pole; also, the Royal Medal (50 guineas) has been conferred upon him.

The affairs of the Peninsula, including both Spain and Portugal, remain much as before. The Queen Regent of Spain seems to be in the predicament that if France does not sustain her, she must throw herself for support upon the *liberal* party among her own subjects, whose hearty co-operation would at once crush the opposition of the Carlists. It is to be desired, certainly, that she may be driven to this alternative. *Castanos* and *El Pastor*, at the head of a small regular force, had been encountered and worsted by a large body of Carlists, and driven to take refuge within the fortifications of St. Sebastianus. Rumor had been current that old Soult had ordered an army of *thirty thousand men, as a corps of observation*, to enter Spain, but the London Courier of 15th, and the Times of 16th, partially contradict, on the authority of Paris papers of the 13th, those rumors. The Courier says:

We have received French papers of the 13 inst. and they bring no confirmation of the rumors to which we yesterday adverted, relative to the interference of France, and which were magnified by our own stock-jobbers into a positive assertion that orders had been issued for the immediate advance of the French army of observation into Spain, and willingly believed by and readily inserted in some of our Contemporaries. The news from Spain, such as it is, is rather more favorable than yesterday to the Queen's cause; but there is nothing decisive either way.

One of the most curious items of intelligence certainly is an alleged threat of *Rothschild*, the banker, to Marshal *Soult*, that "if the French army set a foot in Spain, *he* would not again set a foot on Change." This would be the potentiality of money with a vengeance.

Our accounts from Portugal direct are later than in the London papers.

The Belgic Chambers were opened on the 12th November. The only remarkable feature, is the King's speech, after congratulating the nation and himself, on the birth of the Prince Royal, is the fact that the dispute with Holland, is still, and is long likely to be, *unadjusted.*

[*From the National.*]

Paris, Nov. 12.—There will now be a post of Carlist insurgents occuppying the Spanish side of the bridge of the Bidassoa, within pistol shot of the French sentinels.

Lettres from Madrid at Bayonne announce that orders had been sent to General Saarsfield not to quit Burgos.

[*From the Messenger.*]

It was affirmed on 'Change that M. de Rothschild had been to see Marshal Soult, and had declared to him that if the French army set a foot in Spain he would not again set foot on 'Change.

Extract from the *Indicateur* of the 11th, by a particular conveyance;—The accounts from Spain this morning are much more satisfactory. The panic has passed over—people have reflected that it was very astonishing that Castagnos has been able to hold out a month with 700 men against 6,000, and his retreat to St. Sebastian has ceased to surprise any body.

This success of the Carlists, as a military operation, is a trifle, but from its moral effect, the affair is of more importance, because it may encourage the rebels, and alarm the Constitutionalists.

In our opinion, the most imortant point is, that the two parties are now face to face, and a few days will show which is the strongest.

A letter from Bayonne of the 9th, and St. Sebtastian of the 8th relate only the particulars of the retreat of Castagnos and El Pastor to St. Sebastian.

Among all the extraordinary and gifted individuals whom the French revolution, and the mighty events consequent upon it, have from time to time brought upon the scene, there is not one, probably, whose character, abilities, sagacity and success, have been so remarkable and unerring as those of Talleyrand. Hence it is not to be wondered at that now, even in his latest years, his most trivial acts are watched and commented upon, as though fraught with weal or wo to empires and dynasties. Hence even his visiting cards are, it seems, most significant:

[*Translation from a late French paper.*]

Talleyrand's Visiting Cards.—This Prince, on his return from England, has, of course, left cards with all the great men of the day, but under various forms and titles. He has two kinds of cards—the cards under *envelope*, and the plain card with one corner turned up. According to etiquette, two descriptions of cards are necessary in his double character of Ambassador and Peer.

The card under envelope is that of *etiquette*, and is sent by a footman. The other is presumed to have been delivered in person, and intended as a visit of friendship. Happy he who receives it! Lafitte *formerly* obtained the plain card—*now* he receives one under cover.

Talleyrand commenced his visits as an Ambassador. The members of the *corps diplomatique* have therefore received his card; but the Representatives of the Northern Powers, have, it is said, received only the card under *envelope*. From this latter fact the supposition arises that there is something sinister and threatening. Furthermore, M. de Broglie, the minister of Foreign Affairs, has been left out. In this instance one would naturally infer a want of propriety, but we can give a ready explanation. The Prince has retreating doors; he has just commenced his visits as a Peer of France, and M. de Broglie, being his colleague in peerage, has received a visit. One naturally perceives the difference, and it is most subtle. The order of the visit, and the form of the card have caused M. de Broglie's card to tremble in his hand, and spread alarm in his hotel.

With regard to M. Thiers, (Minister of Commerce) he has been unable to pay a visit to him, as the former, it appears, has taken quarters at the Hotel St. Florentin, (Talleyrand's.) He does not move from it, and keeps a steady eye on that living *political barometer*, in order to study which wind blows at the Thuilleries, and trim his sails accordingly. Moreover, as M. Thiers pretends to belong to the political schools of this cunning Nestor of Diplomatists, he thinks he has no time to lose to improve upon the lessons of his master.

The packet ship Europe, by agreement with shippers and consignees, and by permission of the insurance company, lies off at sea, without the limits o the United States, until after the 1st proximo, in order that the goods by her may be introduced after that period at the reduced duties.

[*From the Globe.*]

The Commissioners under the Convention with the King of the Two Sicilies, who have been for the last four weeks engaged in this city, in the examination of memorials, closed their session on Friday, having disposed of all the memorials filed with the Secretary, under their order of September last. Their next meeting will take place on the first Monday in March next.

CONGRESS—Monday, December 9, 1833.

HOUSE OF REPRESENTATIVES.

The several Standing Committees were announced from the Chair, as follows:

Elections.—Messrs. Claiborne, Griffin, Hawkins of N. C., Banks, Vanderpool, Jones of Georgia, Peyton, Haymer, and Hannegan.

Ways and Means.—Messrs. Polk, Wilde, Cambreleng, Gorham, McKim, Binney, Loyall, McKinley, and Hubbard.

Claims.—Messrs. Whittlesey of Ohio, Barber, McIntire, Grennell, H. King, Gholson, Cramer, Forrester, and Bynum.

Commerce.—Messrs. Sutherland, Davis of Mass., Harper, Foot, McKay, Lawrence, Pinckney, Heath, and Selden.

Public Lands.—Messrs. Clay, Duncan, Boon, Mason, Clayton, Slade of Vt., Leavitt, Ashley, and Ingersoll.

Post Offices and Post Roads.—Messrs. Conner, Kavanagh, Pearce of Rhode Island, Thomas of La., Briggs, Murphy, Lane, Lytle, and Laporte.

District of Columbia.—Messrs. Chinn, W. B. Shepherd, McKennon, Stoddert, Allen of Va., Dannis, Heister, Fillmore, and Taylor.

Judiciary.—Messrs. Bell, of Tenn., Ellsworth, Foster, Gordon, Beardsley, Thomas of Md., Hardin, Parks, and Pierce, of N. H.

Revolutionary Claims.——Messrs. Muhlenberg, Crane, Bates, of Mass., Standefer, Bouldin, Marshall, Young, Baylies, and Turrill.

Public Expenditures.—Messrs. Davenport, Lyon, Paige, Clarke, of Pa.; Tweedy, Gillet, Hall, of Vt; McClene, and Kinnard.

Private Land Claims——Messrs. Johnson, of Tenn.: Mardis, Carr, Galbraith, Man, of N. Y.; Cage, Felder, Casey, and Bull.

Manufactures.—Messrs. Adams, of Mass.; Huntington, of Conn.; Denny, Davis, of S. C. Corwin, Dickerson, Martindale, McComas, and Osgood.

Agriculture.—Messrs. Bockee, Taylor, of Va. Hathaway, Barnitz, Bean, Dunlop, Clowney, Turner, and Davis, of Ky.

Indian Affairs.—Messrs. Lewis, Gilmer, McCarty, Everett, of Vt. Graham, Allen, of Ohio, Dickerson, of Tenn. Howell, and Love.

Military Affairs.—Messrs. Johnson, of Ky. Vance, Speight, Ward, Blair, of S. C. Thompson, of Ohio, Burd, Coffee, and Bunce.

Naval Affairs.—Messrs. White, of N. Y. Williams, Watmough, Patton, Lansing, Reed, Grayson, Parker, and Smith.

Foreign Affairs.—Messrs. Archer, Everett, of Mass. Wayne, McDuffie, Hall, of N. C. Coulter, Jarvis, Pierson, and Carmichael.

Territories.—Messrs. Williams, Allen of Ky. Potts, Johnson, of N. Y. Anthony, Wilson, of Va. Jones, of Ohio, Ewing, and Gamble.

Revolutionary Pensions.—Messrs. Wardwell, Barringer, Tompkins, Moore, V., Lea, Deming, W. K. Fuller, Fowler, and Bell of Ohio.

Invalid Pensions.—Messrs, Burges, Evans, Beall, Schley, Adams, of N. Y., Schenck, Chilton, Chaney, and Mitchell of Ohio.

Roads and Canals.—Messrs. Mercer, Blair of Tenn. Vinton, Stewart, Rencher, Johnson, of Md. Lucas, Pope, and Slade of Illinois.

Revisal and unfinished business.—Messrs. Dickson, Harrison of Pa. McVean, Shinn, and Beatty.

Accounts.—Messrs. Mann of Pa. Lee of N. J. Mitchell of N. Y. Crockett, and Miller.

Expenditures in the Department of State.—Messrs. A. H. Shepherd, Day, Beaumont, Bodle, and Patterson.

Expenditures in the Department of the Treasury.—Messrs. Allen of Vt. P. C. Fuller, Harper of Pa., Spangler, and Clarke of N. Y.

Expenditures in the Department of the Navy.—Messrs. Hall of Me. Huntington of N. J., Ramsey, Sloane and VanHooten.

Expenditures in the Department of the Post Office—Messrs. Hawes, Fulton, and Lee, of New Jersey.

Expenditures in the Department of War.—Messrs. Whittlesey, of N. Y. Deberry, Chambers, Webster, of Ohio, and Halsey.

Expenditures on Public Buildings—Messrs. Whallon, Darlington, Brown, Henderson, and Hard.

QUICKSILVER.—By letters from Canton by the Providence, we learn that many frauds have lately been detected in this article. The iron jars in which it is usually imported contain 76 1-2 lbs each, but they have not only been found deficient in weight, but in many instances 6 to 8 pounds of lead! have been found in a flask. It is advised that at least 10 flasks out of every 100 should be re-weighed before they are shipped, either from this country or from Europe.

[*From the Albany Argus.*]

APPLICATIONS TO THE LEGISLATURE.—List of intended applications to the Legislature of this State, at its next session, prepared from the official notices published in the Argus, down to Dec. 3:—

To Incorporate Banks.

Jackson Bank	$1,000,000	New York.
Eighth Ward Bank	500,000	do
Builders' Bank	600,000	do
Commercial Bank	500,000	do
Tompkins Bank	500,000	do
Bank of Exchequer	10,000,000	do
Washington Monument Bank	750,000	do
Eighth Ward Temperance Bank	500,000	do
Merchants' and Clothiers' Bank	500,000	do
Bank of the State of New York	10,000,000	do
Maiden lane Bank	1,000,000	do
Flour Merchants' Bank	750,000	do
Pearl street Bank	2,000,000	do
Bank of New York	600,000	do
Grocers' Bank	1,000,000	do
Bookmakers' Bank	500,000	do
Com. Bank of the city of N. York	500,000	do
A bank at Harlem	500,000	Harlem.
Chenango Canal Bank	100,000	Greene.
Lumbermen's Bank	150,000	Bainbridge.
Wool Growers' Bank	250,000	Norwich.
A bank at New Berlin	100.000	New Berlin.
Oxford Bank	200,000	Oxford.
City Bank of Albany	500,000	Albany.
Merchants' Bank of Albany	300,000	do
Watervliet Bank	300,000	Watervliet.
Orleans county Bank	200,000	Medina.
Bank of Orleans	150,000	Albion.
Central Bank of Troy	300.000	Troy.
Manufac's, Mech's & Farmers' B'k	500,000	do
Rensselaer county Bank	200,000	Lansingburgh.
Farmers' and Manufacturers' Bank	300,000	Poughkeepsie.
Commercial Bank	500,000	Buffalo.
Butchers' and Drovers' Bank	1,000,000	do
Bank of Erie county	1,000,000	do
Rail-Road Bank	150,000	Ballston Spa.
A bank at Saratoga Springs	200,000	Saratoga Spa.
Waterford Bank	200,000	Waterford.
Bank of Cahoes	250,000	Cahoes.
Cortland Bank	200,000	Cort. Village.
Homer Bank	250,000	Hom. village.
A bank at Delhi	100,000	Delhi.
Canajoharie Bank	200,000	Canajoharie.
Fort Plain Bank	250,000	Minden.
Kingston Bank	200,000	Kingston.
Ulster and Dutchess Bank	200,000	Ulster.
Bank of Rhinebeck	100,000	Rhinebeck.
Hamilton Bank	150,000	Hamilton.
Chittenango Bank	200,000	Chittenango.
Cattaraugus Bank	100,000	Olean.
Bank of Olean	100,000	do
Cattaraugus county Bank	150,000	Ellicottville.
Sacket's Harbor Bank	200,000	Sacket's Har.
Bank of Salem	100,000	Salem.
Washington county Bank	100,000	Sandy Hill.
Battenkill Bank	100,000	Union Village.
Flushing Bank	100,000	Flushing.
Tompkins county Bank	250.000	Ithaca.
Fredonia Bank	200.000	Fredonia.
A bank at Coxsackie Landing	100,000	C. Landing.
A bank at Kinderhook	200,000	Kinderhook.
A bank at Hudson	300,000	Hudson.
Bank of Dansville	200,000	Dansville.
Bank of Mount Morris	200,000	M.t Morris.
Highland Bank	200,0 0	Newburgh.
Mechanics' Bank of Rochester	300.000	Rochester.
Bank of Attica	100,000	Attica.
A bank at Perry (Genesee co.)	100,000	Perry.
Le Roy Bank	200,000	Le Roy.
Susquehannah River Bank	100,000	Binghampton.
Bank of Owego	200,000	Owego.
A bank at Williamsburgh	200,000	Williamsb'gh.
Bank of Lyons	200,000	Lyons.
Clyde Bank	200,000	Clyde.
Waterville Bank	200,000	Waterville.
Oneida county Bank	400,000	Utica.
Mechanics' and Farmers' Bank	300,000	Oswego.
St. Lawrence Bank	200,000	Ogdensburgh.
Allegany county Bank	150,000	Angelica.
Canal Bank at Lockport	200,000	Lockport.

To increase the Capital Stock of Banks.

Greenwich Bank	$300,000	New York.
Dry Dock Company	300,000	do
Phœnix Bank	1,000,000	do
Bank of New York	600,000	do
National Bank	250,000	do
Leather Manufacturers' Bank	400,000	do
Jefferson county Bank	120,000	Watertown.
Bank of Genesee	150,000	Batavia.
Saratoga county Bank	100,000	Waterford.
Ogdensburgh Bank	200,000	Ogdensburgh.
Bank of Newburgh	105,000	Newburgh.
Bank of Buffalo	300,000	Buffalo.
Lockport Bank	100,000	Lockport.

To incorporate Insurance, Exchange, Trust, and Loan Companies.

Amer, Life Ins. and Trust Co. N. Y. (4 ap.)		2 to $3,000,000
U. States do do	do	3,000,000
Columbian do do	do	2 to 4,000,000
National do do	do	2,0000,000
N.Y State do do	Albany	750,000
L. Island do do	Brooklyn	1,000,000
City Loan Company of New York,	New York,	2 to 5,000,000
City Exchange Company,	do	1,000,000
Hudson Fire Insurance Co.	do	250,000
Eighth Ward Insuranc Co.	do	150,000
N. Y. Marine Insurance Co.	do	300,000
Coasting Insurance Co.	do	150 to 300,000
Union Fire Insurance Co.	do	300,000
Van Buren Insurance Co.	do	200,000
Columbia Insurance Co.	do	500,000
Greenwich Insurance Co.	do	200.000
Erie Fire and Marine Ins. and Loan Co.,	Buffalo,	100 to 200,000

To raise Money by tax.

$25,000 annually, in Troy, for sundry Literary purposes.
1,000 in Allegany county, for Bridge across the Genesee river.
3,000 for the same purpose, at Portage, Allegany county.
10,000 in Albany county, to build a new Jail and Work-house.
500 annually, for three years, in Granville, Washington county, to repair Bridges.
500 in Genesee county, to build a Bridge across the Tonawanda creek.
2,000 in Ulster county, for a Bridge across the Rondout creek.
In Clinton county, to pay Levi Platt.
In Bushwick, for erecting Cells in that town.
In Herkimer county, an additional sum for building a Jail.

To Incorporate Railroad Companies.

Syracuse Railroad Company, (Salina to Utica)	$1,500,000
Railroad from Albany to West Troy	
From Troy to Schenactaday	450,000
From Troy to New Lebanon	300,000
Troy and Schenectady, (2 ap.)	250,000
Troy and Champlain (Waterford to Whitehall)	600.000
From Esopus creek to tidewater, (or turnpike)	15,000
From Waterford to Whitehall	800,000
From Columbus Point, Ulster county, to Chenango Point	500,000
Herkimer and Montgomery	150,000
From Williamsburg, Kings county, or Jamaica, Queens county, to Greensport, Suffolk county	
From Utica to Oswego	
Two from Buffalo to Niagara Falls	
From Salina to Utica	
From Batavia to Buffalo	
From Attica, Genesee county, to Buffalo, Erie county	
From Lockport to Niagara Falls	
From Rochester to Buffalo	
From Castleton to the Massachusetts line	

To Incorporate McAdam Road Companies.

From West Troy, through Shaker Village, to the Schenectady turnpike	$ 50,000
From Utica to Trenton Falls	150,000
From New Berlin, Chenango county, to Utica	250,000
From Troy to Whitehall	500.000

To incorporate Turnpike Road Companies

Rensselaer and Berkshire Tunnelling and Turnpike Co. capital $100,000—Greenbush and Troy—From Oxford, Chen. to Oneonta, Otsego, $15,000—From Petersburgh to Brunswick, $15,000—Fort Ann and Granville, $10,000—In the town of Chemung, Tioga co.—Across the Indian reservation in Erie co.

To incorporate Bridge Companies.

Schenectady and Saratoga—Across the Hudson at Troy, and across branch of the Mohawk at Watervliet, capital $100,000—Across the Hudson at Albany.

Companies.

Rensselaer Glass Company, (renewal)—Fishkill Iron Co, capital $100,000—Dover Iron Co., $50,000—Orange Cordage Manufactory Co.—Salina Salt Co., $150,000—Frankfort Manufacturing Co.—Lockport Manufacturing Co., $60,000—A Whaling Co. in Peekskill, Westchester co.

To incorporate Academies and Seminaries of [illegible] Learning.

The N. York Academy of Inventions, capital $100,000—Troy Female Academy—Troy Male Academy—Poughkeepsie Female Seminary—Genesee Wesleyan Seminary at Lima, Liv. co.—Nassau Academy—High School at Preble Corners, Cortland co.—Clyde High School.

To incorporate Savings Banks.

Savings Bank at Buffalo—New York Savings Institution.

To incorporate Religious and Benevolent Societies.

The Second Associate Church in the city of New York—Troy Hibernian Benevolent Society—Troy Annual Conference Ministers' Aid Society.

To incorporate Steamboat, Ferry, and Wharf and Ways Companies.

Southern Steamboat Co. (2 ap.) capital 150 to $200,000—Genesee River Steamboat Co. $30,000—New York and Brooklyn Ferry Co. $100,000—Miamogue Wharf and Ways Co.

To amend existing Charters.

Washington Marine Ins. Co.; Seamen's Bank for Savings; Farmers' Fire Ins. and Loan Co.; Greenwich Savings Bank; New York Athenæum, New York—Farmers' Bank of Troy. [equalizing shares]—Lafayette Fire Co.—Kingston and Middletown Turnpike Road Co.—Ducthess Turnpike Co.—Watervliet Turnpike Road Co.—Croton Turnpike Road Co.—Cocksackie Turnpike Road Co.—Albany and Bethlehem Road Co.—Brunswick and Pittstown Road Co.—Newtown and Bushwick Road Co.—Albany and Schenectady Road Co. [to remove toll gates, &c.]—Mohawk and Hudson R. R. Co.—Brooklyn and Jamaica R. R. Co.—New York and Albany R. R. Co.—City of Troy—Poughkeepsie Lancaster School Society—Village of Williamsburgh, King's Co.—Village of Poughkeepsie—To repeal the charter of the Montezuma Turnpike and Bridge Co.—Washington County Insurance Co.—Genesee Manual Labor Seminary.

To incorporate Cities and Villages.

City of Brooklyn—City of Rochester—Village of

Rhinebeck—Village of Clarkeville, Madison Co.—Village of Attica, Genessee co—Village of Fort Plain, Mont. co.—Village of Bath, Steuben co.

To increase the capital stock of Manufacturing and Turnpike Companies.

Syracuse Salt Company, capital $50,000—Kingston and Middleton Turnpike Road Co., $5000.

To divide Towns and erect new ones.

To annex a part of Pendleton, Niagara., co., to Amherst, Erie co. Also part of Clarence, Erie co., to Lockport, Niagara co. Also to erect a new town in Niagara—To erect a new town in Madison co., from parts of Augusta and Vernon in Oneida co., and Smithfield and Lenox, Madison co.

Miscellaneous Applications.

For the relief of the First Great S. West Turnpike Road Co.—For the release of title to an escheated lot in Albany—To vest in Asa and Ackaah Page title to lands in Chautauque co.—To allow a salary to the first judge of Kings co. and to authorize him to hold courts of common pleas—To open the Albany Pier—For the release of the state right to a bond and mortgage on three lots in the city of New York—For a side cut from the Erie canal to the Hudson river at Port Schuyler—To "protect and encourage" Justin Smith in supplying the Village of Whitehall with water—To incorporate the Onondaga Horse-Racing Association.

AN INTERESTING AND USEFUL MAP.

A friend of ours has now in a state of forwardness, a Map upon which will be delineated nearly all the Railroads now chartered in the U. States. It is designed to show the *present* contemplated connexion of the different lines, as well as where others may hereafter be constructed to connect with them. It will be completed in a few weeks, and may be had either in sheets, or put up in morocco for pocket maps, in any quantity, by applying to the subscriber.

D. K. MINOR, 35 Wall street.

New-York, August 14, 1833.

TO STEAMBOAT COMPANIES.

☞ **PROFESSOR RAFINESQUE**, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid.

S1 R J M M & F

TO RAILROAD COMPANIES.

☞ **PROFESSOR RAFINESQUE**, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years, and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office. Apply, post paid.

S1 R J M M & F

☞ **TOWNSEND & DURFEE**, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York,
January 29, 1833.
F3 tf

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGE COMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,

WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 49, page 772 of this Journal.

1 d6

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafinesque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c. dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 500 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

⁂ Orders for these works, or any other of Professor Rafinesque's, received at this office.

A9 tf J M & F

NOTICE TO MANUFACTURERS.

☞ SIMON FAIRMAN, of the village of Lansingburgh, in the county of Rensselaer, and state of New-York, has invented and put in operation a Machine for making Wrought Nails with square points. This machine will make about sixty 6d nails, and about forty 10d nails in a minute, and in the same proportion larger sizes, even to spikes for ships. The nail is hammered and comes from the machine completely heated to redness, that its capacity for being clenched is good and sure. One horse power is sufficient to drive one machine, and may easily be applied where such power for driving machinery is in operation. Said Fairman will make, vend and warrant machines as above, to any persons who may apply for them as soon as they may be made, and on the most reasonable terms. He also desires to sell one half of his patent right for the use of said machines throughout the United States. Any person desiring further information, or to purchase, will please to call at the machine shop of Mr. John Humphrey, in the village of Lansingburgh.—August 15, 1833.

A29 tf R M & F

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings. Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means.

S1 R J M M & F

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by

E. & G. W. BLUNT, 154 Water street,
corner of Maidenlane.

J31 6t

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,

JAMES P. STABLER, Superintendent of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors.

E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
Germant. and Norrist. Railroad

m1 ly

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads,
No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlem Railroad, now in operation.

J25 tf

RAILROAD CAR WHEELS AND BOXES, AND OTHER RAILROAD CASTINGS.

☞ Also. AXLES furnished and fitted to wheels complete, at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited.

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INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable.

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio
Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

m16

METEOROLOGICAL RECORD, KEPT IN THE CITY OF NEW-YORK,

From the 26th of November to the 9th of December, 1833, inclusive.

[Communicated for the American Railroad Journal and Advocate of Internal Improvements.]

Date.	*Hours.*	*Thermometr.*	*Barometer.*	*Winds.*	*Strength of Wind.*	*Clouds from what direction.*	*Weather.*
Nov. 26..	6 a. m.	35	29.71	WNW	moderate	WSW	cloudy
	10	36	29.81	..	strong	..	fair
	2 p. m.	36	29.91	..	..	..	..
	6	35	30.80	..	..		clear
	10	34	30.10	..	..		..
" 27..	6 a. m.	33	30.15	SW	moderate	SSW	fair
	10	40	30.20	..	..	..	..
	2 p. m.	44	30.01	..	..	..	..
	6	41	29.99	..	..	..	
	10	40	30.03	..	light		clear
" 28..	6 a. m.	38	30.18	WNW	..		..
	10	40	30.21	..	moderate	W by N	fair
	2 p. m.	40	30.23	W by N	..	..	..
	6	39	30.31	..	..	..	..
	10	35	30.30	..	..	..	..
" 29..	6 a. m.	31	30.30	ENE	..	..	cloudy —smoky
	10	36	30.25	..	..	SSW	.. — ..
	2 p. m.	42	30.21	E	..	..	.. — ..
	6	43	30.20	..	..	..	.. — ..
	10	42	30.20	..	..	..	fair
" 30..	6 a. m.	45	30.10	ENE	..		rainy —cloudy
	10	45	30.10	..	..		cloudy —rainy
	2 p. m.	41	30.05	NE—NNE	fresh	NNE	rain
	6	40	30.05	NNE	..	..	..
	10	39	30.05	N	..		cloudy
Decem. 1..	6 a. m.	39	30.03	NNW	moderate	NNW	..
	10	41	30.07	NW	light	..	..
	2 p. m.	45	30.03	..—NNW	.. — mod.	WNW—NNW	fair
	6	40	30.07	NNW	mod.—light	NNW	..
	10	39	30.09	..	..		clear
" 2..	6 a. m.	36	30.18	NW—NNW	light	WSW	fair
	10	38	30 23	NNW	..	..	..
	2 p. m.	42	30.20	N—NNE	light—mod.	WSW / NNE—ENE	cloudy
	6	40	30.35	NE	moderate		rainy
	10	39	30.27	..	fresh		..
" 3..	6 a. m.	40	30.30	NE by E—ENE	..	ENE	cloudy
	10	41	30.33	ENE	..	..	rainy
	2 p. m.	42	30.30	NE by E	..	..	cloudy
	6	41	30.35	..	..	..	..
	10	41	30.35	..	..	..	..
" 4..	6 a. m.	39	30.34	NE	moderate	WSW	..
	10	40	30.36	..	..	.. / ENE	..
	2 p. m.	43	30.32	NE by E	..	..	..
	6	42	30.31	..	..	..	..
	10	41	30.35	..	..		..
" 5..	6 a. m.	40	30.36	N by W	faint		..
	10	41	30.38	NNW—WSW	..	N—slow	fair —cloudy
	2 p. m.	43	30.36	WSW—N	..	NNW	cloudy
	6	44	30.36	N	..	NW	.. —fair —cloudy
	10	42	30.39	..	..	WNW	..
" 6..	6 a. m.	38	30.39	NNW—N		N—slow	.. —fair
	10	41	30.40	N		..	fair
	2 p. m.	44	30.40	NNE	light	NNW	..
	6	41	30.40	NE		..	..
	10	35	30.41	..		..	..
Decem. 7..	6 a. m.	32	30.49	NE	moderate	W by S / NNW	cloudy
	10	34	30.50	..		..	.. —fair
	2 p. m.	38	30.49	..		W by S / S	fair —cloudy
	6	37	30:48	..		..	cloudy
	10	37	30.50	..	..—fresh		...
" 8..	6 a. m.	41	30.30	ENE	fr'h—strong	E	rainy —scuds from E
	10	43	30.28	..	strong—gale	ENE	.. —rain
	2 p. m.	42	30.11	..	gale— / strong / —gale	E—mod'te / SE—brisk / ENE—swift	rain at 4—clouds partially open, and strong [gale*
	6	43	30.88	..—NE—NNE	fresh—mod.		cloudy —hazy
	10	41	30.81	N by E	moderate		hazy —fair
" 9..	6 a. m.	37	30.97	SW—WSW	fresh	WSW / NW	fair
	10	40	30.95	WSW	..	..	..
	2 p. m.	44	30.96	..	..	WSW	cloudy
	6	41	30.98	..	..	..	fair
	10	39	30.98	..	..	..	..

Average temperature of the week ending Monday, December 2, 38°.85.
Do. do. do. do. December 9, 40°.23.

In October the, observations of winds fom the North-Eastern quarter, were 15½—from the South-Eastern, 23—from the South-Western, 54—from the North-Western, 44.

The observations of the direction of clouds or higher current, for the same month, were as follows: From the North-Eastern quarter, 12—from the South-Eastern, 5—from the South-Western, 77—from the North-Western, 33.

Maximum of the barometer 30.52 in.—Minimum, 29.30 in.—Range, 1.22 in.

In November, the observations of winds are, from the North-Eastern quarter, 23—from the South-Eastern, 11—from the South-Western, 74—from the North-Western, 36.

The higher currents during the same month were, from the North-Eastern quarter, 5—from the South-Eastern, 4—from the South-Western, 62—from the North-Western, 36.

Maximum of barometer 30.57 inches—Minimum, 29.48—Range, 1.09 inches.

* At Middletown, Connecticut, a distance of one hundred miles *to windward*, the crisis of the storm, on Sunday, 8th of December, was near five hours *later* than in this city.

BANK NOTE TABLE.

MAINE.

U. S. Branch.par a½	Cumberland....½a¾	Augusta........½a¾
Thomaston.....½a¾	Caso............do	Gardiner........do
Vassalborough...do	Merchants'......do	Kennebunk.......do
Canal...........do	Union...........do	Manufacturers'..do
Portland........do	Waterville......do	Winthrop........do
Bangor..........do	Saco............do	Bath........nosale
South Berwick...do	Lincoln.........do	

PENNSYLVANIA.

U.S. Bank ..par a½	Montgomery co.½a¾	Gettysburgh ..¾a1½
Philadel. Banks ..½	Columbia Br.Co..do	Carlisle ....do
Harrisburg.....½a¾	Chester county..do	Miners'.........do
Northampton.....do	Lancaster.......do	Pittsburg.......do
Farms' Reading.do	Germantown......do	Chambersburg ..do
Do. Lancaster..do	Delaware county.do	Erie ....do
Do. Bucks co...do	Penn Township..do	Monongahela....5
Easton..........do	York ¾a1½	

NEW-HAMPSHIRE.

U. S. Branch.par a½	Rockingham...½a¾	Claremont.....½a¾
Cheshire.......½a¾	Portsmouth......do	Grafton..........do
Concord.........do	Farmers'........do	Merrimack Co...do
Exeter..........do	Piscataqua......do	Merrimack.......do
New-Hampshire.do	Dover...........do	Commercial.....do
N. H.—Strafford.do	Winnipiseogee..do	Connecticut river do

VERMONT.

Brattleborough..½a¾	St. Albans......½a¾	Orange County.½a¾
Montpelier......do	Windsor ....do	Burlington ......do
Rutland ....do	Vergennes ......do	Middlebury.....½a¾
Bank Caledonia .do	Bennington .....do	

MASSACHUSETTS.

U.S. Branch..par a½	Plymouth......½a¾	Bank of Norfolk½a¾
Boston city B'ks½a¾	Pawtucket.......do	Cambridge.......do
Agricultural.....do	Salem...........do	Andover.........do
Beverly..........do	Springfield......do	Falmouth........do
Bedford Com'l ..do	Taunton.........do	Mercantile......do
Commercial......do	Worcester.......do	Lynn Mechanics' do
Dedham ....do	Blackstone......do	Merch'ts Salem..do
Gloucester.......do	Fall River.......do	do N. Bedford.do
Hampshire.......do	Exchange........do	Bunker Hill.....do
Franklin.........do	Danvers.........do	Atlantic.........do
Sunderland......do	Asiatic..........do	Franklin.........do
Hampden........do	Mendon.........do	Lowell..........do
Mechanics'......do	Oxford..........do	Brighton........do
Marblehead.....do	Milbury.........do	Central..........do
Newburyport....do	Housatonic......do	Greenfield.......do
Phenix..........do	Hamp Manufac.do	Essex ....broke
Pacific..........do	Barnstable......do	Farmers'....broke
Manu. & Mech..do	Leicester........do	

RHODE-ISLAND.

U.S. Branch.par a½	Village Bank...½a¾	North Kingston ½a¾
Providence.....½a¾	Smithfield Lime Rock..........do	Mount Hope.....do
Union............do	Newport Bank..do	Pawtuxet........do
Exchange........do	Roger Williams .do	Phœnix..........do
Mechanics'......do	Schuate.........do	R. I. Central.....do
Globe...........do	Kent............do	Warren..........do
Manufacturers'..do	Eagle, Bristol...do	Warwick.........do
R. Island Union.do	Do. Providence..do	R. I. Agricult'l..do
Rhode Island....do	Mount Vernon...do	Cumberland......do
Merchants' Providence.........do	Cranston........do	N. E. Pacific....do
Do. Newport....do	Bank of Bristol..do	SmithfieldUnion.do
N E.Commercial do	Commercial.....do	High Street......do
Washington.....do	Freemans'......do	Woonsockt Falls.do
Burrilville Agric. and Manuf....do	Franklin........do	Mech.&Manufs..do
Smithfield Exch.do	Landholders....do	Far. & Mech broke
	Narraganset....do	Burrilville.......do

CONNECTICUT.

U. S. Branch par a	Hartford ¾a1	Union ¾a1
Norwich . $5 par	Phœnix ....do	New Haven.....do
Bridgeport ..$5 do	Middletown.....do	Thames.........do
Fairfield Co....½a¾	Mechanics'.....do	Windham Co....do
do Branch.do	New-London....do	Stonington......do
EastHaddam....do	City Bk, N. Hav.do	

NEW-YORK.

U. S. Branch...par	Bank of Albany.½a¾	Westchester Co...½
City Banks.......do	State Bank .....do	Central Bank.....½
Long Island Bk..do	Commercial,$50.do	Auburn ....do
Durchess.Co.....do	Bank of Troy ...do	Rochester........do
Lansingburg ....do	Farmers', $50...do	Jefferson County.do
Poughkeepsie ...do	Mohawk.........do	Geneva..........do
Catskill..........½	Utica.............½	Chenango ......do
Newburgh .....do	Do. Branch....do	Bk Columbia.broke
Do. Branch....do	Ontario.........do	Middle District..do
Mech.&Farmrs.½a¾	Do. Branch....do	Franklin Bank..do

NEW-JERSEY.

Trentn B.Co.$5 par	Morris Canal.....½	Commercial......½
State B Newark..½*	Newark B. Co. ..do	Cumberland ....do
Do. Morristown.do	Orange ....do	Salem B. Co......1
Do. Elizabeth...do	Washington.....do	Paterson.........do
Do. Camden....do	People's ....½	Monmouth ..broke
Do. NBrunswick.do	Sussex ....½	N.J. Manuf. Co..do
Farm. & Mech. at Rahway.. do	Farmers........do	Franklin.........do
	Bk NBrunswick.do	Jersey..........do

* State Banks at Newark, Morristown, and Elizabethtown, ver $5 par; NBrunswick, do $50 do: F. & M. Rahway, $10 do

DELAWARE.

Farmers.........¾a1	Wilm.& Brand. ¾a1	Smyrna ¾a1
Do. Branches..do	Delaware ....do	Commercial ....do

MARYLAND.

U. S. Branch ....½	Bank Maryland.½a¾	Hagerstown.......1
Baltimore Bks..½a¾	Frederick co....do	Susqueh. Bridge...2
Farmers ....do	Westminster ...do	Elkton ....broke
Do. Branches..do	Farmrs &Mech..do	Planters ....do

DISTRICT COLUMBIA.

Patriotic........¾a1	Alexandria ¾a1	Mech.Georget'n.¾a1
Metropolis......do	Potomac.........do	Do. Alexandria.do
Washington ....do	Union ....do	Farmers & Mech.do

VIRGINIA.

U. S. Branch... ½	Farmers.......¾a1	Virg.&Brnches.¾a1
Vally,&Branch.¾a1	Do. Branches..do	Northwestern....5

NORTH CAROLINA.

State,&Bran's.2½a3	Newbern&Br'h2½a3	C.Fear,&Br'h.2½a3

SOUTH CAROLINA.

U. S. Branch.....½	Union..........1½a2	State Bank.. 1½a 2
Plant &Mech..1½a2	South Carolina..do	State Bank S.C .do

Commercial Bank, at Columbia, 2a2½.

OHIO.

U. S. Branch... ½	Marietta.......... 4	Farmers & Mech. 4
Chillicothe 4	Lancaster ......do	Belmont.........do
Western Reserve do	Mount Pleasant..do	Commercial.....do
Franklin........do	Farmers.........do	Steubenville..broke

GEORGIA

U. S. Branch.....½	Augusta.......2a2½	*Macon.......2a2½
Planters.......2a2½	State B. & Brh's.do	Darien.........2a2½
Marine&FireIns.do	Merch.&Planters †	Augusta In.&Bk.do

* The Bank of Macon has failed. The other Banks in Macon are good at the rate quoted above. † Failed.

MICHIGAN

Michigan Banks..1

LOUISIANA.

U. S. Branch ... ½ | State2½a3,Or'ls2½a3 | Louisiana..... 4

MISSISSIPPI.

State of Mississippi 3

ALABAMA.

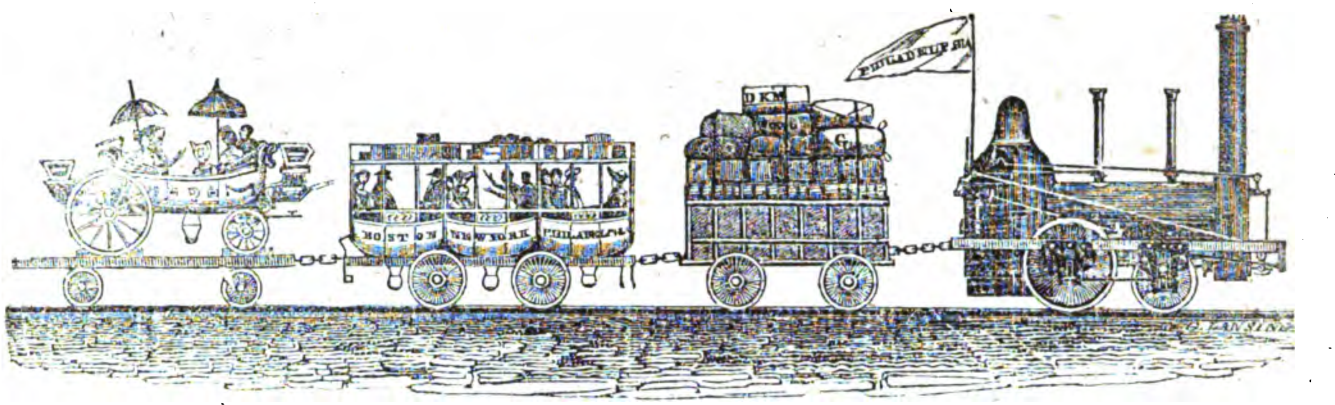
U.S. Branch.. ½ | Mobile2½a3,State 2½a3 | Tombeckbe.....40

MISSOURI

U. S. Branch .... ½

CANADA.

Canada Banks...3 a



AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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D. K. MINOR, EDITOR.] **SATURDAY, DECEMBER 28, 1833.** [VOLUME II.—No. 52.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, DECEMBER 28, 1833.

With this number, closes the second year of the publication of the RAILROAD JOURNAL ; and although the high hopes and expectations which were entertained by its projector and publisher, have not been fully realized, in the extent of its circulation, yet, it is believed that it has been of some service to the cause in which it embarked, and to which it has been steadily devoted. In a previous number, it was intimated that, in consequence of a want of patronage to sustain it in its present form and, size, it might be either continued in a cheaper form, or discontinued with the present number ; but, from the prompt subscription of several of its earliest and most constant friends, and assurances from others, that they *would* subscribe, for *additional* volumes from its' commencement, as well as use their influence to extend its circulation, I am highly gratified to be able to say, that the RAILROAD JOURNAL will be continued, and not only continued, but materially improved in its appearance and contents. The two years which have elapsed since its commencement have enabled me to provide foreign publications, from which to select ample and interesting materials, as well as to enlist many able and scientific correspondents of our own country, in its service, which cannot fail to render it hereafter much more valuable than it has hitherto been, to these who honor it with their patronage.

Having, after mature deliberation, resolved to *continue* its publication in its present form of a weekly journal, and also to increase the quantity of its scientific reading, to the exclusion of a part of the news of the day, &c., it is confidently hoped that the improvements which have already been made in its appearance since its commencement, together with a positive assurance that it *will be continued*, at least another year, will be a sufficient guarantee to its subscribers and the public, for *paymen in advance* for the ensuing volume. A moment's reflection will be sufficient to convince any person, that such a course *only* will enable me to do them justice. They will readily see that, without such a rule, I must be a loser of *hundreds*, by scattering a thousand small accounts from Maine to Louisiana, whereas, even if by any event its publication should cease, they would not, at most, lose more than two or three dollars, and not even that, as they know where to find me, and could request some friend to call and receive the balance due them. Of that, however, they need not fear, as, when the volume is commenced, they may rest assured that it will be completed.

It is, therefore, *confidently anticipated that every subscriber will remit for the ensuing year, on the receipt of the first number* ; and by doing so they will contribute, in no small degree, to the success of a work which, thus far, it may be truly said, and without arrogance, too, has contributed more to *public* than to *private* interest.

The ensuing, as the past volume, will be issued once a week, *except to such as prefer to pay four dollars, and have it put up like this in semi-monthly or in monthly parts, with a cover:*

This number of the Journal contains several highly interesting and important articles : among them will be found a description, with engravings, of Mr. Burden's boat, an invention which promises, as we have been informed by those who have examined it, the most important results in steamboat navigation ; also, an interesting description, with engravings, of the *Suspension* Railway, invented by Henry Sargent, Esq., which have been furnished us by an intelligent friend at Boston. It affords us pleasure to be able to close the year and the volume with a number containing so much of interest, and we do not hesitate to promise that the ensuing volume will be far more valuable than either of the preceding.

Report of the Committee on Cars, to the Direction of the South Carolina Canal and Railroad Company, submitted 20th November, 1833.

(Concluded from page 805.)

We are deprived of the use of the West-Point by necessity of new arrangement and frames. S. Carolina, by necessity of new frame and perfecting boiler. Barnwell, by replacing flues burned by accident. We hope to add the Hamburgh in a few days for the transportation of freight at slow speeds.

To the 5th. The West-Point and Hamburgh have been constructed on the plan of the English engines. The performance of the first has been one-third to one-half of those of the eight-wheel engines. It is believed that the Hamburgh is capable of performing one-third more than any of the eight-wheel engines. The operation of both these engines has been very severe on the road, and every engineer, as well as the persons in the charge of the road, unite in the opinion that it would be highly injudicious to use such engines.

To the 6th. The eight-wheel engines differ from the English engines in plan of boiler, manner, and number of supports, arrangement and application of the power, and in the attainment of an equal distribution of the weight ; it has been in parts which are common to the two engines, and which are under similar circumstances, that all our trouble has been experienced, and in the *supposed* improvement, that we have obtained an engine possessing very important advantages, and in the use of which every engineer on the road has become their decided advocate, as will appear more fully from other documents herewith communicated.

The Committee, having concurred with the chief engineer in the opinion that mere answers to the above queries would not fully embrace what is evidently the object of their being made, authorised, at his request, an examination into the results of experience as derived from our road.

With this view the Committee have attended an examination of the persons, who, having been employed, and in charge of the management and repairs of the engines used thereon, are practically and intimately acquainted with all the circumstances: their experience, therefore, is of essential importance in forming correct opinions in relation to them.

The individuals examined were, Mr. Petsch, master of the workshops, who, having had charge of all the engines, is, in profession, of much valuable information and experience on the subject.

Mr. Darrell, who has been the engineer of the Best Friend (four-wheels)—the West Point (four-wheels)—South Carolina (eight-wheels) and Charleston (eight-wheels)—and has occasionally run all the others. Mr. M'Candish, who was the engineer of the Barnwell, and who has run the Charleston. Mr. Robertson, who has had long experience with the four-wheeled engines on the Liverpool and Manchester road, and brings recommendation of the first character from the engineer of that work, and was sent to this country with one of Mr. Stephenson's engines. On our road he has run the Charleston, eight wheels, and Phœnix, four wheels, and occasionally the other engines. Mr. Cummings, who for eighteen months run four-wheel engines on the Liverpool and Manchester road, has run a four-wheel engine on Camden and Amboy road, and a six-wheel engine on the Susquehanna Road. On this road he has run the Charleston and Hamburg.

Mr. Allison, who has been the engineer of the West Point and Edisto, and has run the others, not being in town, the statements were submitted to him and fully concurred in. Mr. Raworth, who has been engineer of the Phœnix, and made a few trips on the other engines, was also absent on the road, but expresses his accordance with the statements made.

The following is an abstract of the testimony brought before the Committee:—

1st As to the expediency or necessity of attempting to run eight-wheel engines. Were there any circumstances which renders it practically necessary or expedient to introduce them? If so, what are they? and has experience on our own or other roads, confirmed or fulfilled the views which led to that measure.

Mr. Petsch, Mr. Darrell, and Mr. Allison, are the only persons of those named who have practical acquaintance with the circumstances at the time, and they unite in the opinion that such circumstance did exist, and that it was highly important that something should be done in consequence of them; that the circumstances were the severe effect of the four-wheeled engines on the road; and the experience of all the persons, either as derived from our own or other roads, confirm most fully the views which led to the introduction of the eight-wheel arrangements.

2d. As to the propriety of postponing orders for English engines. Did or did not a practical consideration of the same circumstances render it injudicious to use four-wheel engines of the usual English construction at that time?

As far as their experience bears on this question, it confirms the views of inexpediency of using such engines at all.

3d. As to the attainment on the eight-wheel engines of the object aimed at, have the eight-wheel engines been successful or otherwise in meeting the difficulty anticipated, and in possessing the qualities for which they were attempted?

The testimony is unanimous and decidedly in the affirmative, showing that extraordinary ease of motion has been attained, such as has never been approached in a four-wheel engine, and that the result is of high practical value to the Company.

4th. Are any, and if so, what of the difficulties which have attended the use of eight-wheel engines, to be attributed to them as *eight-wheel engines?*

With the exception of some temporary trouble with the steam-pipes of the South Carolina, which were effectually removed, the uniform reply was, *none*.

5th. Would the same description of workmanship, proportion of parts, and arrangements, have produced the same failure and disappointments with four-wheel engines, as have taken place with the eight-wheel ones?

The reply was by all in the affirmative, and probably greater.

6th. Are the eight-wheel engines more complicated than the four-wheel ones, as ordinarily constructed?

The statement is, that they are not.

7th. Are the eight-wheel engines more or less easy of access or repair, either when running or standing still, than the four wheel ones?

They are much more easy of access and repair in both cases.

8th. What has been the causes of failure and difficulties?

They have been independent of the principle of an eight-wheeled engine, and have originated in unsound materials, imperfect workmanship, and especially from the inadequate proportion of the working gearing to the strain which they were fairly and necessarily subjected to. In the three eight-wheeled engines last put on the road, double valves, similar to those employed on most of the engines on the Liverpool and Manchester road, were used, the resistance from these valves, with the pressure of steam which our engines work with, has been too great for the valve gearing attached to them. With these engines there has also been much trouble from the imperfect operation of the pumps, partly attributed to bad workmanship, partly to inattention to keep them in thorough working order, partly from being compelled to use the engines, with the pumps not in good order, or only one pump, and partly from the necessity of using water when the wells were low, containing much sediment. A large portion of the continued difficulty has been occasioned by being compelled to run the engines with an imperfect repair, instead of thoroughly correcting the cause of failure; from the exhibit of the engines on the road at sundry periods, it will be apparent how inadequate from causes entirely independent of principle or plan, and of our control, have been the number of engines on the road, to the demands made on them, and consequently it is evident why it has been found necessary, rather repeatedly to repair them than to remove thoroughly the cause of failure, the latter would have required time, which our engagements would not allow, and rendered immediate repair and use essential; to these causes must necessarily be added, those existing in mismanagement, inattention, extraordinary strains from wrong position of gates and crossing rails, injudicious speeds and similar sources not easily provided against, especially under our peculiar circumstances, and with new machinery and men inexperienced in its management.

9th. As to the effect which experience has had on the original and present operation as to the eight-wheeled engines of the persons examined.

They were all originally unfavorably impressed as to the eight-wheel engines; but notwithstanding all the attendant trouble, experience in their use has led to a decided preference to them, and to an unanimous opinion that none other should be used on any road constructed of wood and iron, and to the belief that they will eventually be adopted on all railroads.

Although not embraced in the immediate objects of the committee, it was thought proper to take advantage of this opportunity to ascertain as far as the practical views of the persons before the committee was of value, what were in their opinions the principal evil with the arrangement of machinery, as is found existing in both eight and four-wheel engines. The reply was, in having the working gear out of view, and access of the engineers when the engine was in motion, and in having the direction of pistons and pumps horizontal, which renders it almost impossible to keep the parts well oiled, and when combined with difficulty of access, occasions a very great waste of oil; and that the correction of these evils would be of great practical value, especially on a road where so long a line of continuous motion is required.

On a plan being submitted and explained, which had in view an arrangement of the machinery of an eight-wheel engine, expressly intended to remove these objections, and embracing some other advantages believed to be of great value if they can be attained, the opinion was general that it would be successful, and that both the objects to be attained, and the probability of success, were highly in favor of such an arrangement.

On reviewing and comparing the above statements, it will be perceived that in no instance have difficulties or derangements in the machinery arisen from the fact of there being eight wheels to the engines. Nor has the principles on which the eight-wheel engines are constructed, had any agency in producing the evils complained of; but, on the contrary, the same results to a more injurious extent would have occurred to engines on four wheels, if constructed with the same defects of proportion and workmanship. It appears clear to the committee, that eight-wheel engines do not contain in themselves, either from any new principle introduced, or from the necessary arrangements of their parts in construction, the elements of self-destruction, to any greater degree than the four-wheel engines; nor do they effect the road as violently.

If, then, the conclusion be clearly established, that important advantages have been attained by the eight-wheel engines, that they are peculiarly adapted, and, indeed, indispensibly necessary, to the preservation of the road, and that the results anticipated are more than realized, it would appear to be a useless task to go into an examination of the causes which induced the Board originally to concur with the chief engineer in giving them a preference.

It might be sufficient for the Board to point to the results, and rest on them for their justification. They will, however, briefly advert to the state of things then existing.

At that time there were eight or nine English engines in the United States, which had been imported by different companies; four of them had been ordered for a road similar to ours in plan and material. The first trial on this road proved so seriously injurious, literally shaking its parts asunder, and breaking down the rails, (as was witnessed by one of your committee,) that a total abandonment of steam power was immediately resolved on, and the road was prepared at a great expense for the use of horse power. Two of the others were imported to be used on roads constructed of iron rails, on a stone foundation. Their performance had not been tested at the time our Board were compelled to decide on the plan and character of their locomotives; and also, whether they should be obtained at home, or from abroad, it was subsequently ascertained, that in order to render them effective, the number of wheels were changed from four to six. In addition to these facts, the Board had the example of the Baltimore and Ohio Company, which combined a greater amount of talent, wealth, and expense, than perhaps any other similar corporation in the nation. Many of the leading stockholders in this company were prejudiced in favor of English engines; from their connection with English commercial houses, they were enabled to obtain the most accurate information on the subject; yet with all these advantages we find them, after mature deliberation, offering premiums and other inducements to the American manufacturers, to engage in the construction of engines, rather than risk their importation from abroad.

All the accounts from England concur in stating the expense of repairing locomotives, and that not more than one-third of those

Owned by the Liverpool and Manchester Company were fit for work at any one time, while at the same period, "The Best Friend," (the Pioneer of American locomotives,) and the "West Point," both of American manufacture, were worked with success upon our road.

Such was the nature of the circumstances, and the extent of the information possessed by the Board, when they were called on to decide on the character and extent of the locomotive power to be introduced on the road. The valuable improvements which genius, aided by the light of experience, has subsequently produced, being then unknown, of course afforded no aid to the Board in making their decision. Governed in their opinions by the facts which had at that time come to their knowledge, they authorized the construction of four eight-wheel engines, instead of six as recommended by the chief engineer, leaving it optional with that gentleman to contract for them at home or abroad. A highly advantageous engagement was made with N. Bliss, of New-York, by which his extensive works and experienced hands were placed at the disposal of our chief engineer, under whose immediate direction and supervision the engines were to have been constructed. Scarcely, however, had this arrangement, which promised such satisfactory results been commenced, when the cholera made its appearance in that city, and raged with peculiar violence in that section of it in which Mr. Bliss' works were situated, A total desertion of the workmen, and the utter ruin of the employer, was the consequence. Mr. Allen then applied to the Board for permission to proceed to England forthwith, as the measure best calculated to remedy this disappointment, and to place the engines at our command in the shortest time and on the best terms. Important as these considerations were, there were others that, in the opinion of the Board, were even more so, viz. The presence of the chief engineer on the line of road, and his personal supervision and direction in its construction. Under these circumstances, this Board authorized Mr. Allen to contract for the engines at the north, on the best terms he could obtain. Under these instructions Mr. Allen entered into a contract with the West Point Foundry. This contract was made at a time when, from the great demand which existed for that species of work, and the few establishments which could furnish it, on account of the dispersion of their workmen by the pestilence, that the manufacturers were enabled, in some measure, to prescribe their own terms, and, indeed, seemed rather as conferring a favor than receiving a benefit, by the acceptance of our work.

Your Committee, although they may have already extended their remarks to too great a length, cannot quit this part of the subject without bringing to the view of the Board, a part of the evidence which they conceive has a direct and important bearing on the inquiry, "*What has been the cause of derangement as far as ascertained?*" Your Committee have special reference to the great velocity at which the engines have moved with heavy trains of cars attached, and would, without hesitation, assign this as a prominent cause of injury, both to the road and to the engines. Every witness questioned on the effect produced on the machinery by great rapidity of motion, unhesitatingly replied, that it was highly injurious. Indeed, it requires but a slight daily observation to convince any person, "that a series of shocks constantly repeated on machinery of so cumbrous a mass, so delicately adjusted in its parts, and so heavily strained as a steam engine, must greatly injure and rapidly destroy them."

Mr. Allen, in his communication of the 29th January, 1831, distinctly recommends that the speed of the "West-Point" be limited to ten miles per hour, without regard to the number of cars in the train. Mr. Stephenson, in reply to the inquiry made by the President of the Boston and Lowell Railroad Company, viz.: What do you consider the economical rate of speed at which Locomotives should travel? states that they should not exceed eight miles per hour, with freight cars, nor sixteen (16) miles per hour, with passengers, the latter speed yielded to, not from considerations of economy or durability, but solely to gratify the public in their wishes for rapid travelling. Mr. White, the gentleman who projected the Mauch Chunk Railway, and under whose directions it was constructed, thus expresses himself:—"The motion of twenty or thirty miles per hour, on railroads, will be fatal to waggons, loading and road, as well as to human life." "Our first two months' use was fifteen to twenty miles per hour; which would soon have ruined both road and waggons, and was, I am persuaded, much dearer than the turnpike on which was laid the rails."

The Liverpool and Manchester Company, after having experienced the injurious effects of rapid travelling, and been made sensible of its inexpedience where it was most sensibly felt, (in the revenue of the Company,) have lately decreased the speed of the locomotives upon their road. The item for maintenance and repairs of locomotives, for six months ending July 1st, 1832, was £10,582, which, with the repairs to the road, made an annual expenditure of £35,000 sterling money. At a time when it was represented that out of twenty-four engines, not more than six or seven were in working order, the others undergoing a thorough repair. The item charged in the semi-annual report to July, 1833, 'for repairs of machinery' is £12,000 for the preceding six months. From which it appears, that the working and repairs of the locomotives on the Liverpool and Manchester railway cost annually about £24,000, or, in other words, the startling sum of *£800 per mile per annum, for every mile of their line of road.

While on the subject of the cost of machinery, repairs, &c. it is deemed proper to correct an erroneous impression which has generally prevailed, in relation to a statement, in the accounts of the Company, submitted at the last meeting; by which it would appear, that the wages of the hands employed in the workshops amount to $28,204 14 cents.

This item has been generally, though improperly, supposed to contain the amount paid for repairing and keeping in order the running machinery on the road, when, in fact, it includes the salary of the several engineers charged with the superintendance of the locomotives, of the hands attached to the several trains, the wages of the laborers engaged in loading and unloading the freight cars at the depository; to which it may be added, that the work executed in the work-shops has been of the most miscellaneous character, embracing the construction and fitting up of passenger and freight cars, iron work for the passing places, sliding sections, and revolving platforms throughout the line; clamps, bolts and braces for the Edisto Bridge and stationary engine, with a variety of other jobs too numerous to mention.

No account has been kept of the separate performance of each locomotive, so far as to enable your Committee to form an estimate of the work done by each, and the amount of expenses chargeable to each. Such an account would be satisfactory, as it would furnish valuable data, by which the relative value of each could be fully estimated.

The cash receipts is not a fair criterion, as it forms but a part of their actual performance.

The annexed statement, marked E, is an estimate of what it would have cost for the transportation of material to construct the road at the railroad price of transportation; which, although not money that *came in*, was certainly money *kept* from *going out*; if *not made*, it was evidently *saved*, and is justly creditable to the engines.

The statement annexed and marked D, exhibits the performance of the engines from the 1st of June, to the 18th of the present month.

The statement marked F contains an account of the passenger and other cars added since the meeting in May.

By reference to the books at the depository, it will be seen that the performance of the engines, since the meeting of the stockholders on the 4th to the 18th of the present month, has been as follows:

Phoenix, 4 trips ascending and 4 descending, with passengers, - - - - - - - - - - - -	$1286 50
Charleston, 2 trips ascending and 3 descending, freight $226 79, passengers $648 44 - -	875 33
Edisto, 2 trips ascending and 1 descending, passengers, $531 75, freight up, $180 00, freight down, $115 67 - - - - - -	827 42
	$2,989 25

The return trip of the Edisto on last Saturday, and the upward trip on Monday, in freight and passage money amounted to $620.

All of which, is respectfully submitted, with the unanimous concurrence of the Committee,

ALEXANDER BLACK,
Chairman of Committee on Cars.
Charleston, 19th Nov. 1833.

At a meeting of the Board on the 19th inst., Resolved unanimously, That the above be accepted, and laid before the stockholders at their next meeting.

JOHN T. ROBERTSON, Secretary.

D.

Statement of the locomotives on and off the road, from the 1st of June to the 18th of November, both included: South Carolina—from 1st June to 7th September, on the road 47 days, off the road 52 days—90. Charleston—from 1st June to 18th Nov., on the road 37 days, off the road 134 days—171; not entered for regular work till 1st day September; the time chiefly occupied in new modelling and alterations. Barnwell—from 10th June to 20th September, on the road 80 days, off the road 23 days—103. Edisto—from 8th Sept. to 18th Nov., on the road 26 days, off the road 45 days—71. Phœnix—from 1st June to 18th Nov., on the road 250 days, off the road 21 days—171; during the above time, she has occasionally performed double duty. Hamburgh—three trips on trial, and taken off the road.

E.

The locomotives have transported the following materials for the use of the road:

1500 tons iron, value in freight at 7 cents per ton per mile, -	$7,500	
75 tons spikes, - - - - -	350	
1500 tons timber at an average of ten miles, - - - - -	1,050	
		8,900
—— tons of fuel for use of engine, workmen, back and forwards, provisions, machinery for inclined plane, revolving platforms, pumps, &c. equal to and including contractors and their agents, provisions, tools, &c. assumed, - - - - -		12,500
		$21,400

The land transportation and conveyance by water attendant on the above, would, from the difference of value between the rates paid, and those charged, have augmented it to $64,200, or thrice the amount estimated.

F.

Statement of locomotives, passage, crank, freight, and tender cars on the line and at the depository, made since 1st day May, 1833: Two eight-wheel locomotives, Barnwell and Edisto; 1 four-wheel do, Hamburgh; 3 improved passenger cars; 4 do. ready for mounting; 10 do. on hand, (not finished); 1 crank car; 40 freight cars, (completed); 28 do. on hand not finished; 5 tender cars with butts; 9 do. with water tanks; 24 covers for freight cars; repairing freight and passage cars at various times; 1 baggage car ready for mounting.

JOHN GROSS, Clerk of Works.
Charleston, Nov. 18, 1833.

Three freight cars burned on the road; 1 improved passage car broken to pieces on the road; 1 old do. do. do.

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* Notwithstanding this immense expenditure for repairs, this Company has declared a dividend of 8 guineas per share, equal to double the usual interest of the country.

Suspension Railway.—We have frequently been asked how the Suspension Railway is constructed; and how, when constructed, it could be used to any purpose with but *one rail*. Of the suspension railway we had heard much said, but had seen no description from which a correct idea could be formed, and therefore could not give an answer. The great object of the Journal, however, being to furnish information to all who wish it, relative to all kinds of railways, we took measures to obtain, through a friend in Boston, from the patentee, Henry Sargent, Esq., such a description, accompanied with drawings, as will enable any person to understand the principle upon which this cheap and convenient mode of internal improvement is constructed. There is certainly much ingenuity displayed by the inventor, in the construction of his model; and although we are not altogether satisfied that the invention will prove of great importance in practice, yet we consider it well worth the attention of those engaged in the construction of railways, as we are every day more convinced that we are only at the *threshold* of a successful tide of experiment in the construction of railroads. We are, in truth, at this time only *beginning* to learn to construct railways. Twenty years will do for railways what the same period has done and *is now* doing for *steamboats*. Instead of costing *twenty* or *thirty* thousand per mile, and travelling 15 to 25 miles per hour, they will be constructed for one-half the money, and we shall be able to travel at the rate of twenty-five to forty miles per hour. This, we are aware, will, by some, be deemed visionary; yet a moment's reflection upon the rapidity and extent of the improvements of this country for a few years past, will convince any one that the past warrants even greater expectations than is here predicted.

The *suspension* railway has not heretofore been properly brought before the public. We shall, however, endeavor to obtain, as we trust we shall be able, from the gentleman who has so obligingly furnished us with the following, further descriptions, with accounts of its performances, &c., by which a more correct opinion may be formed of its merits.

Suspension or Single Rail Railway.—Imperfect descriptions of this invention have been published in pamphlets and newspapers, in England and America; erroneous impressions, however, have existed in regard to it, which it is the object of the writer to remove. The erection of the Single Rail Railway in England, and similar experiments in this country, have demonstrated this invention to be practicable, and no one doubts its utility. The superior excellence of this Railway, in comparison with all others, lies in its economy; a point which, it cannot be denied, in the ardor of speculation, is not always sufficiently regarded. The very simplicity and cheapness of an article are not unfrequently the cause of its condemnation, since it is neither "dear-bought nor far-fetched:" considerations, which seemingly enhance the value of our possessions. All other advantages being equal, economy must turn the scale in favor of the Single Rail Railway. To avoid the effects of frost and snow, the foundations of all railways, *in this climate*, must be equally deep, and their tops more or less elevated. It is not perceived that this kind of Railway is inferior to any other, in its capacity for the transportation of heavy loads; nor in those facilities, by which it accommodates itself to every purpose of transportation. It is manifest that no estimate of any Railway, per mile, can be made, without a full knowledge of its location, and of the tonnage, *per wheel*, intended to be transported; for the more the weight is distributed, the lighter and less costly may the railways be. The Single Railway must always be less expensive, other things being equal.

Should the surface of the route be unequal, the plane of the Rail may be maintained, by elevating it to a reasonable height on posts of unequal length. From this circumstance, it must appear to the most casual observer, that a great *additional* saving in embankments, culverts, bridges, drains, &c. is claimed for the Single Railway. It has been objected to the Single Railway, that it is occasionally elevated, for the reasons above stated. But is this a comparative objection? Is it not common to both, and to all? The Double Railway at Quincy passes over intervals, in some places, twenty feet deep; and the Rails, and *horse path also*, are elevated accordingly. Yet the railway at Quincy was constructed expressly for the transportation of heavy masses of granite. All writers, on the subject of Railways, have adverted to lateral pressure, as a point of great consideration. This effect is inseparable from the very nature of the Double Rails. But in Single Railways much less allowance is required for lateral pressure: hence it is believed that the Single Rail can carry more than the Double, in proportion to the number of wheels employed; for friction is diminished, in proportion as the lateral pressure is taken away. This lateral pressure causes the flanges of the wheels to rub on the sides of the Rails, and corresponding effects are produced, at all the axles of the wheels; for the load on the Double Rail is immediately upon the axles, communicating its impulses directly and entirely to them.

On the Single Rail, such is not the case: the load is placed at the ends of the bars, and all motion is necessarily diminished at the axles, which are very *short*, and may be made much *less* than usual, as they are not compelled to bear those shocks which result from lateral pressure. The late experiments in England have demonstrated the superior power of the Single Railway, for the carriage of heavy burthens, attributable, in a great measure, to the causes above recited.

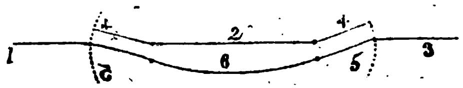
The most perfect steadiness of motion is secured to the carriage, on the Single Railway, by the late additional improvement of the Friction Rail and Rollers: being a splendid Rail or rod placed on one side only of the supporters, and which bears the pressure of a few pounds only, amounting to nothing more than a slight difference, in the two parts of the load, and causing the heavier side to bear lightly on the Friction Rail. This pressure amounts to nothing more than that which occurs in adjusting the loads of common carts and trucks, with this difference, that the pressure is maintained longitudinally in the one case, and laterally in the other. It has been supposed, that a precise equipoise of the two portions of the load was indispensable. This is by no means required: a *difference* may exist of two for one, as a leverage takes place, which prevents all ill effects from such cause.

On the Single Railway, the load is more easily put on and taken off. The single Rail may be more easily maintained in its proper position; the supporters and their foundations are not likely to be affected, by ordinary causes. The foundations are below the influence of frost, with several feet of heavy stone abutment on both sides, or packed with good gravel, unmixed with perishable earth. Should any change take place, which is not expected, as the pressure of the load is perpendicular, the carriage may still follow the inequalities of the single Rail; whilst any considerable change in the position of either Rail of the double Railway must obviously impede all progress for a time, as effectually as it would be impeded on a common road by a fallen tree, or similar obstruction. This Railway may be made of wood, stone, or iron: if wood, various means may be employed for its preservation.

It is not believed that, in point of facilities, any Railway is superior to this which is now recommended. As in other Railways, so in this, hills are ascended and descended; roads are crossed, above or below, as they are crossed by canals, and by other modes; the passage of streams is effected on piles, or in *railway boats* particularly adapted to this object. It has been objected to the Single Railway, that, because of its elevated position, it must impede the common travel, which may lie across its path. We have already shown that this elevation is unavoidable, and that all objections, on this score, are general, and applicable to every species of Railway, *in this climate*: for all Railways are elevated; the Single, on the posts, and the Double, on embankments and supporters also.

Crossing places are required, in both Single and Double Railways, at eligible points, and can as easily be made in the former, as in the latter.

The passings or turnouts are effected with as much ease, on the Single as on the Double Railway, as the following sketch may demonstrate:



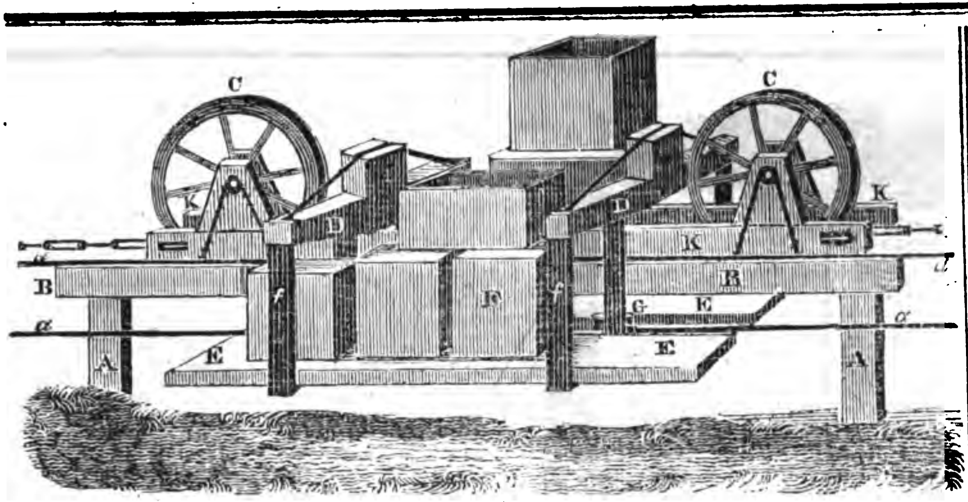
Let the figures 1, 2, 3, represent the Single elevated Railway, with the portions 4, 4, thrown back, on simple but strong hinges or joints, which, when closed, form their respective parts of the Railway, being fastened by a simple latch.

Figure 6 represents the turnout. 5, 5, two curved portions of the sideling or turnout, moved on strong joints; when closed, as in the sketch, connecting those parts of the Rail 1, 3, with the sideling 6. A light carriage, travelling fast from 1 to 3, will at all times pass a slow carriage and take the lead of it, by turning on to the curved Rail 5, to the Sideling 6, to the main Rail 3. The driver of the slow carriage having ample time, without stopping his carriage, to step forward and close the straight bar 4, and open the curved bar 5, with one motion of his hand, they being connected at bottom, (see dotted lines.) The slow carriage passes on to the main rail 2, and the driver replaces the bars as in the sketch, or they may be replaced mechanically; the fast carriage, coming up in the meanwhile, passes forward, the slow carriage being at No. 2. This mode is more particularly adapted to two Single Railways—one for going and the other for returning; but it may be used with advantage travelling both ways on one Rail—and is similar to the mode adopted on the Double Rail, except that there are no cast iron plates with grooves, &c. which probably will not be very convenient in our frosty climate—especially as there are many of them at each sideling. The annexed drawing is a perspective view of the Single elevated Railway and carriage, which may be raised on supporters of two and a half or three feet on level ground, and more on uneven surface, as circumstances may require.

The carriage cannot overturn, or incline farther than the friction rail, and may be of any ordinary breadth and length, and braced and strengthened as may be thought proper, and easily adapted to its particular use; and if the centre of gravity is below the top of the rails, the load may be placed higher than the top of the wheels, which, if the above principle be regarded, may be of the largest diameter; and even regardless of this principle, if the friction rail and rollers be employed.

If any objection exist, in relation to the Single Railway, such objection should be very formidable when opposed by considerations of great economy, superior advantages, and peculiar applicability to our own country.

Boston, April 30th, 1827.



SUSPENSION RAILWAYS.—Many years ago, after the subject of railway transportation had begun to excite general attention both in England and America, the suspension or single railway was invented *originally* by Henry Sargent, Esq. of Boston, Mass. This invention (for, as the English writers say, it can with no more propriety be called an improvement than the plough can be called an improvement of the spade,) did not for many years attract the attention which its importance appears to deserve, and it remained for a long time without benefit to the public or advantage to the inventor and patentee. Circumstances, which we shall by and by refer to, took place about twenty years ago, which tended to make this railway better known; but at the same time Mr. Sargent found that he was in some danger of being deprived of his fame as inventor, and his right as patentee; and he consequently took some prompt measures to vindicate both.

Among other railways of Mr. Sargent's invention in the United States, there are now two in the county of Suffolk, Massachusetts: one at Chelsea, of a circular form, and a few hundred feet in extent, is used only for purposes of amusement, and is in fact a deviation from his original invention, and no more than an extensive model. The other, at East Boston, is a suspension railway, as lately improved; and has been commenced within a few months; and is not yet entirely completed. This railway is constructed over a marshy piece of ground, full of creeks and ponds, and much more unfavorable than the average surface of the country.

By the help of the plate, which, with the exception of the friction rail, *a a*, represent the railway and car, as first invented, we shall endeavor to convey some idea of the principles of the suspension railroad, and then to point out the improvements which have been subsequently made.

A A are the wooden posts driven or otherwise secured into the earth, upon which the rail is to be supported. The ground in the annexed plan presents a level surface, not requiring any difference in the length of the supporters. But where the surface is uneven, these can be left of unequal length, and braced every three feet from the top of the rail, according to the undulations of the surface, so that the tops of the supporters shall be on the same level. There have been various expedients suggested for securing these posts in the ground, in order to diminish the tendency to incline from the vertical posture, by the weight and motion of the loads which they are destined to bear. The lower extremities of the posts should be sunk in transverse trenches to a depth of four or five feet, more or less, and placed upon a foundation of hard earth or stones. The sides should be filled up with rubble stones, or otherwise braced. The post should be supported, (in marshy soils,) by at least one strong timber, placed obliquely in the ground and bolted into it, by which it will be stiffened by the oblique timber, and secured from inclining in the opposite direction

B B is the bearing rail, made of strong timber, of dimensions proportioned to the weight intended to be supported. This rail is to be firmly fixed upon the supporters with mortice and tenant. When the wheels C C are intended to be guided with flanges, it is advisable to have the top of the rail shod with iron, *d d*, in order to prevent the flanges from fraying, or, as it is called, brooming the sides of the rail, and thereby wearing it out and making it uneven. C C are the wheels, placed one before the other, in a direct line on the rail, and provided with flanges on either side, to keep them in position. From the axles of these wheels are suspended the horizontal bars or frame work, K K, to which the cars for passengers or merchandise are connected by the transverse bars D D, and strong, inflexible frame *f f*, so that the cars are balanced on each side of the rail, like the bags of a pack saddle. F is the loading placed on the cars in readiness for transportation. It might be objected by persons not acquainted with mechanics, that this method of transportation is unsafe, because there being but one line of wheels, the cars would be overturned, unless the load is very equally balanced on each side of the rail. It is of course better that the load should be so balanced, but it could very easily be shown in practice it is impossible that the cars can be overturned when the materials hold together. When one side is heavier than the other, a slight inclination of the heavier side takes place, and that is all; for as soon as the heavier side begins to incline, it approaches the centre of gravity, and is thus continually losing its tendency to incline, and cannot incline further than the supporters, as the car is longer, &c.; while, on the other hand, the lighter side is receding from the centre of gravity, and is consequently gaining power to balance the other by the leverage which takes place. We have frequently seen that a person carrying a single pail of water will extend his disengaged arm at right angles with his body, and by this simple instinctive motion, one arm alone is made to balance the other with a weight of twenty pounds at the end of it. A very great additional security is derived from the very low position of the centre of gravity, owing to the load being placed below the wheels, instead of above or on a level with them, as is the case in common carriages. It is also impossible that the car should be overturned in case of the breaking of the axles, for the load being on each side of the rail, and below the centre of gravity, the body of the car would fall but one-fourth of an inch, and slide on the rail, if in motion. and there be firmly supported.—Such are the general principles of the suspension railway as originally invented by Mr. Sargent.

A few years ago the plan of a railway precisely similar in its nature was submitted to the British public by H. R. Palmer, Esq., and it has been generally noticed in English scientific works as Palmer's Patent Suspension Railway, no acknowledgement being made of Mr. Sargent's prior claim. It is impossible to say whether the English inventor had taken any hints either directly or indirectly, from the American. We do not know that he had ever heard of it, but it is very certain that the latter could have had no possible assistance from the former, because he had demonstrated its practicability by actual experiment, many years before it was mentioned on the other side of the Atlantic. This discussion, however, is of little consequence. Newton's argument, with regard to Leibnitz's alleged discovery of fluxions and the differential calculus applies with equal force to this case. Whether Mr. Leibnitz invented it after me or had it from me, is a matter of no consequence, as second inventors have no rights.

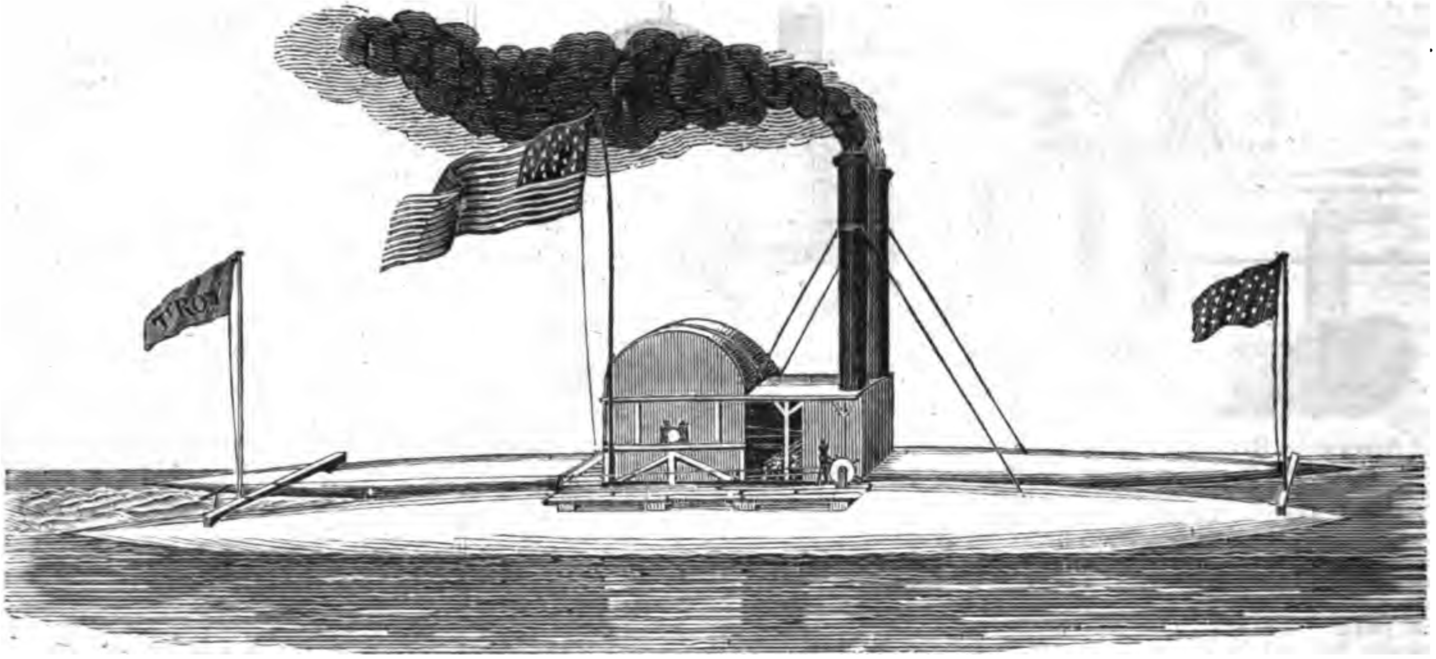
Mr. S. has subsequently made several improvements upon his first invention, which have been in part adopted in his railway at East Boston. The most important of these is the friction rail, *a a*. Although it is impossible for the car to be overturned, yet as it is supported only on a single line of motion, but on the whole breadth of the wheel, it would be apt, except in cases where the load is composed of inert matter, and very nicely balanced, to have an oscillating vibratory motion on the rail. To prevent this the small rail *a a*, made of wood, is fastened on each side of the supported A A, and to prevent friction from the sides of the car, a wheel *b*, on a vertical axis, is placed under the floor of the car, to run horizontally upon the rail. The pressure upon this rail is very trifling, amounting to much less than the difference of weight between the two sides of the loaded car, because the overloaded side having a tendency to descend in a perpendicular line, the oblique pressure upon the friction rail is smaller than the whole tendency of the loaded side to descend. The rail may therefore be of a small size, and can be furnished at a very trifling additional expense; and by means of it, the car, even with a shifting and varying load, will be kept as steady as if upon a double track.

Another great improvement has been suggested with regard to the wheels. If the wheels are kept on the main rail by flanges, as in the plate, it is absolutely necessary that the rail should be shod with iron, which causes a very great additional expense. If this is not done, the continual friction of the flange on the edge of the rail, will cause it to fray or broom as before stated. To obviate this difficulty, the wheels may be made wider than the rail, without flanges, to run freely upon the smooth surface of the rail, and to keep their direction, guided by rollers, of which the place only can be seen in the plate, may be placed horizontally at *c c*, to run on the side of the rail, thus answering every purpose of the flange, but with a much smaller degree of friction, and with a saving of the whole expense of the iron guard for the rail.

A due regard being had to the principles above stated, the cars intended to be put upon the railway may be varied according to the nature of the articles to be transported, and the fancy or taste of the proprietor. The railway at East Boston, is as we have before said, built over a tract of marshy land of a peculiarly unfavorable nature. The supporters are piles driven through the marsh to a stratum of blue clay beneath, and strengthened by oblique braces. F ing merely an experiment, the cars to be pla upon it are intended only for the transporta of passengers to a place of entertainment, a farther end of it.

The only serious objection that has b made to the suspension railway is, that bei g elevated so far from the ground, it may not be so sufficiently permanent, and so capable of bearing heavy loads, at a *rapid* rate, as the iron rails which are elevated only a few inches. We do not wish to discuss this question, though many persons whose opinions in these matters are of great weight, believe that it may be made sufficiently permanent for all practical purposes.

[For the conclusion of this article see page 832]



[*From the Mechanics' Magazine.*]

The New Era of Steam Power.—In our first volume, at page 118, we inserted a short article on the probable application of steam power to various purposes during the year, which is now nearly brought to a close. We there state that "every day brings to light some new form in which its irresistible energies may be employed. Ten years ago the idea of substituting a steam engine for a horse, as propelling power on a turnpike road, would have been thought chimerical. * * * We shall not be surprized to find it, before the year is out, employed to extinguish fires, to blast rocks, or in excavating the earth for canals. No man can set bounds to its utility, or the modes of its application." Since then we have received various reports of the success of steam carriages on common roads, and as a proof of their being in practical operation, we refer our readers to page 311 of this Magazine, where will be found an account, (taken from the London Repertory of Arts for November,) of their performance on one of the most crowded roads in the vicinity of that metropolis; it has also been used in extinguishing fires, as will be seen by reference to page 329. Inventions and suggestions of importance, as connected with steam power, have within the last few weeks so multiplied upon us that we have resolved to give, in as condensed a form as possible, all the information we have received in this article, and as one of the most important, we shall commence with an account of Mr. Burden's new steamboat, an invention which we hesitate not to say is of the first importance. (See above engraving.)

[The account here referred to was published in the Railroad Journal of December 14th, page 789.]

Our readers will have observed that the construction of this boat is on a principle that can scarcely be misunderstood by any one. Every person knows that a mass moves more easily through the water endwise than sidewise; and as the editor of the Journal of Commerce very justly observes, "Mr. Burden has carried the principle to its *ne plus*; instead of building a boat so narrow that she could hardly be made to stand erect, he has made a *pair* of boats, and so being relieved from all danger of capsizing, he has been able to elongate them to his heart's content." The rudder, which is placed immediately behind the flag with the word Troy on it, is only a plate of iron about 6 feet long, and about 5 inches wide, and is governed by the motion of a steering wheel, placed parallel with the boiler, on the same trunk to which it is connected by ropes, as will be seen in the engraving: it is similar to a common steering wheel, and as the chief weight of the parabolic spindles or trunks is in the centre, it causes it to revolve as on a pivot. This may be illustrated by placing a common rolling pin used in making pastry, of the same form, on a table, and turning it; that will form a complete circle, and on that principle, this boat turns, whereas all other vessels turn on their stern.

Fig. 2 is a cross section of the internal part of one of the trunks: *a a a a*, the staves, 26 in number, 3½ inches thick, to each of which is attached an iron bolt, *b b b*, 26 inches in length, passing through the staves, and countersunk on the outside of them: these bolts are fastened to an iron ring, *c*, by means of nuts, *d d d*, screwed on the inside; so that the tighter the nut is screwed, the more compact it makes those staves immediately opposite. Sufficient room is left in the centre for a man to enter and pass fore and aft, to turn the nuts, if necessary.

Fig. 2.

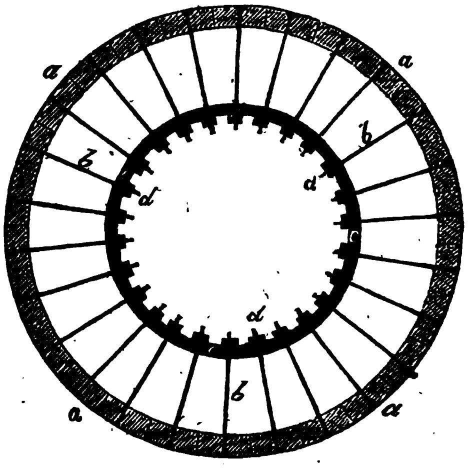
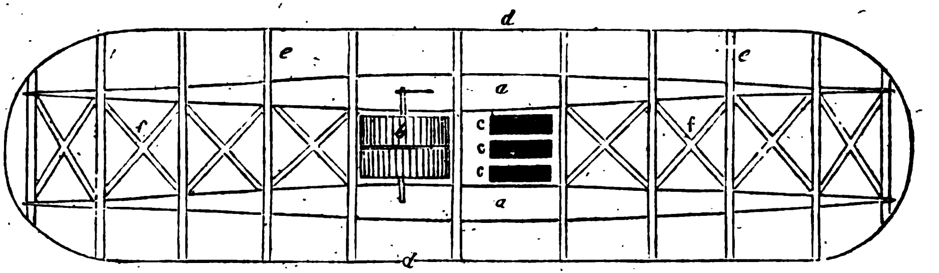


Fig. 3 shows the plan of connecting these two spindles or trunks, upon which the decks are to be built. *a a*, the trunks or spindles; *b*, the water wheel; *c c c*, the boilers; *e e*, the beams which connect it with the outside guard *d*; *f f*, the braces.

Fig. 3.

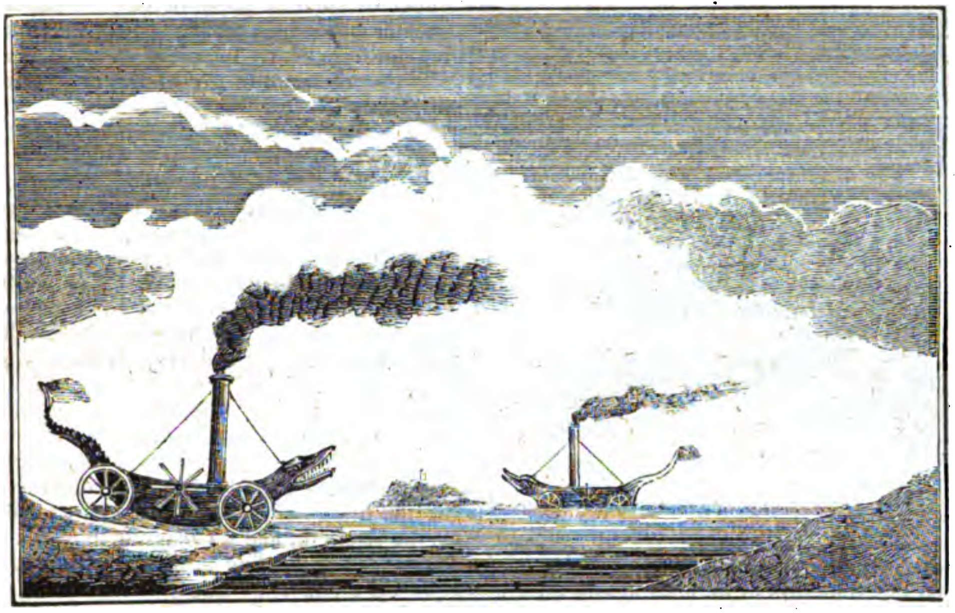


We think it right to state another fact in connection with the advantages which we have enumerated; and that is in her complete exemption from jarring or vibration while under way. The passengers in this boat could easily imagine themselves upon terra firma, were it not for her great velocity.

It is, we understand, to be named the EMMA, OF TROY, in respect, on the part of the inventor, to his amiable and intelligent partner for life.

The boilers have been constructed under the direction of the Rev. Dr. Nott, who accompanied us on our trip, a man distinguished by his piety and scientific attainments; and we have the authority of the editor of the N. Y. Gazette, for stating that "Dr. Nott stated that he would have no hesitation in placing his cot over the boiler, at all times, and going to sleep with perfect composure, without any dread of danger; and that it was among his happiest reflections, that he had lived long enough to have contributed so much towards the preservation of human life, while so many thousands were enjoying the benefit of steam navigation."

We shall now introduce a plan of a machine calculated to go by land and water, propelled by steam, for the design of which we are indebted to the "Young Mechanic." Its construction is so simple that we consider a description unnecessary. In those districts where ferries are frequently to be crossed, we think it might be advantageously used.



Hitherto the chief obstacle of going long voyages by sea in steamboats, has been the difficulty of carrying sufficient fuel. That obstacle is in a great measure obviated by a discovery of Mr. Rutter, an engineer in England, for generating heat by water, to which we have before alluded at pages 117 and 182, and which we think still we shall be able to prove was first discovered by an American citizen. At present, we shall copy Mr. Rutter's account from the London Mechanics' Magazine.

[For the article here alluded to see Railroad Journal of November 2d, page 690.]

In the London Mechanics' Magazine of October 5th we find the following further particulars;

As I find that the question I recently proposed to your valuable correspondent, Mr. Rutter, as to his new process, is inadvertently so worded as to be liable to misconstruction, I take the earliest opportunity to desire its correction.

The process in question is not for "making gas" only, but for *generating heat* for all the purposes to which that powerful agent is applicable, as must, indeed, have been by this time gathered from the articles on the subject in the Mechanics' Magazine. Gas is produced, it is true, in the first instance, from the combustion of the tar and the water, but it is instantaneously converted into flame, to be used *in any case where heat is required*—whether the manufacture of gas for illumination (to which it has been applied at Salisbury), the production of steam for numberless purposes of manufactures and navigation, or a thousand other equally important uses. Gaseous matter has, I understand, been before obtained from water to some extent, but only by means of processes too expensive and too complicated to be of general utility. I remain, Sir, yours respectfully, F. H.

London, Oct. 1, 1833.

From the same Magazine of October 19th, we also make the two following extracts:

The notices of Mr. Rutter's new process for generating heat have greatly interested me, and having some practical knowledge of the great difficulty of obtaining sufficient "stowage" for the fuel in steam navigation, without encroaching on the space required for other purposes, and disturbing the trim of the vessel too much, I am disposed to think that Mr. Rutter's discovery *will* do much towards changing "the face of the world," and to believe that the period is "now fast approaching, when communication by steam may be established with every part of the globe."

The economy of this plan, in *weight* and *cost*, will appear the greater, if we compare it with the expenditure on the present system. According to the data given by your correspondent, in No. 529, the account will stand as follows:

To produce an effect equal to 120 lbs. of Newcastle coal, will require 15 lbs. coal tar, say 20 lbs. water, and 25 lbs. coke, in all 60 lbs. But as water may be supplied from alongside as wanted, deduct 20, leaving 40 lbs. of fuel, which, on Mr. Rutter's principle would produce an effect equal to 120 lbs. Newcastle coal, or three times the weight of the fuel at present used. If Mr. Rutter's data *only* approximate to the exact proportions, we cannot fail to be struck with the extravagant waste of fuel upon the present system. Every commander of a steam-vessel knows, or ought to know, that the ashes, *and cinders too*, which are thrown overboard, are not nearly equal to half the weight of coal consumed in a given time. From what has passed under my own observation, when in command of a steam-vessel, I am inclined to think that they do not exceed, in ordinary cases, 10 per cent. of the fuel consumed; and if so, there is a difference of 48 lbs. to be accounted for out of every 120 lbs. of coals consumed. Where this goes we can be at no loss to imagine, when we observe the immense volume of smoke which marks the course of a steamer at sea; even with the most careful stoking, a vast quantity of inflammable matter passes off unconsumed. Deducting the actual loss in this way, it appears not improbable it would be found that the difference of the total weight of the inflammable matters, efficiently *applied to the generation of steam*, would not be so great as it appears to be at first sight.

From the preceding statement it appears, that there is a balance in favor of Mr. Rutter's method of generating heat of 200 per cent., as compared with the weight of Newcastle coal, and that by loading a vessel with the same weight of fuel, to be consumed on this plan, she would be able to keep the sea three times as long as at present.

Another, and by no means unimportant advantage of Mr. Rutter's plan, is, that the material required being fluid, and withal of less specific gravity than water, it may be advantageously stored in tanks fitted to the vessel, in those spaces which are now comparatively useless, and may be so disposed as to serve in lieu of ballast, and thus render steamers less crank than they now are. As each tank is emptied it may be filled with water, so as to preserve the same trim during the voyage, which is by no means an unimportant consideration, as it is well known that swift vessels are much sooner put out of trim than others. The absence of the large funnel, which is now required, would be a great advantage, both in velocity and comfort in a seaway.

With regard to the comparative economy of Mr. Rutter's method of generating heat, it obviously depends upon the cost at which "the bituminous, oleaginous, resinous, waxy, and fatty substances, in a fluid state," can be procured.

Suppose that coal tar is used. This article could at one time, and may now, probably, be obtained for 1*d.* per gallon at the works, or even less. Taking it at 1¼*d.* per gallon, and coke at 28*s.* per chaldron, weighing (say) 18 cwt., then the account will stand thus:

1¼ gallons tar 1½*d.* 25 lbs. coke (say=½ bush.) 4½*d* —6*d.* cost of fuel on Mr. Rutter's plan, equal in effect to consumption of 120 lbs. Newcastle coal on the present system:

120 lbs. Newcastle coal = say 1½ bush. at 9*d.* per bush., would cost 13½*d.*, or 125 per cent. more.

Something must be allowed for the expense of the apparatus for injecting the inflammable liquids into the fire, &c.; but even here an allowance should be made, on the other hand, for the increased room which would be available to other purposes than the stowage of fuel, for which it is now required—for the saving of the cost of the funnel—and also for the reduced expense of repairs to the hull of the vessel, in consequence of not being subject to those irregular strains in a gale of wind to which steamers are now liable.

I have no personal knowledge of Mr. Rutter, but I could not forbear addressing the foregoing observations to you upon the subject of his invention, which I find is already quibbled about, nay, by some decried, on account of its very simplicity! Let them remember the tale of Columbus and the Egg, and try to discover its application in the present case.

I am, &c. GEORGE BAYLEY

Ipswich, Oct. 3, 1833.

I perceive by your last notice, that Mr. Rutter is preparing for publication a work on the application of his new principle, and I beg to assure him that he has my sincere wishes for the complete success of his patent, &c.

It occurred to me, that about fourteen years since, in consequence of a paragraph which had then met my eye, I had been induced to make the following experiment: About equal portions of common tar and water were put into a half-pint glass retort, after which the orifice of the beak was reduced, by drawing out at the table blowpipe, to about one-eighth of an inch diameter. The retort being fixed over an argand lamp, the apparatus was taken into my garden on a dark night, and the contents of the retort brought to a state of brisk ebullition. As soon as vapor issued with rapidity, a light was applied, and in an instant I beheld a jet of flame eight or nine inches in length, constituting a brilliant firework, the intense heat of which was found capable of melting several refractory mineral substances. I lay no claim to originality in this little experiment, which is precisely the same in principle as Mr. Rutter's method, and this the following extract, which gave rise to my experiment, will show:

"AMERICAN WATER-BURNER.—An apparatus, called the American Water-Burner, has been invented by Mr. Morey, of New-Hampshire. It is a rough blowpipe, but is applicable in many cases in place of a furnace. Tar is intimately mixed with steam, and made to issue from a small jet, in the manner of an eolipile, and the stream of matter being ignited, produces a flame of great size and intensity. It appears that the water is partly decomposed towards the middle of the jet, and that the heat is thus increased by increasing the quantity of active agents; but, whatever the exact effect, the water is found to be useful in preventing the formation of smoke, and increasing the combustion."—[New Monthly Magazine, April, 1819.]*

Perhaps, Mr. Editor, you will indulge me in a few more remarks. In the autumn of 1827, a scientific friend and myself succeeded in beautifully illuminating a very large room, then used as our laboratory, with gas obtained from the decomposition of resin; and being at the same time occupied with the oxy-drogen blowpipe, in producing intense light by means of lime and other substances, it occurred to us that the light thus furnished would prove admirably adapted to the purposes of illuminating objects usually exhibited by the solar microscope. In the course of a few weeks, subsequently, the illuminating power of resin gas, and the principle of applying the light of lime to the microscope, were practically demonstrated in a lecture before the Canterbury Philosophical Institution. I believe it was early in the following year that I was informed a patent had been granted for lighting a town on the continent with "resin gas," and every body knows that, during the present year, the "gas microscope" has been brought out as one of the popular exhibitions of the metropolis.

Now I feel convinced, Mr. Editor, that both these plans were originated and carried into effect independent of any thing made public by me; and just as well am I satisfied, notwithstanding the extract previously given, that the principle of generating heat, now made known, is as purely original with Mr. Rutter. Coincidences of this kind have frequently happened, and the more men are taught to think for themselves, the more frequently they will happen, which, after all, is nothing more than another proof of the value of scientific acquirements. Mr. Rutter, I feel persuaded, will not mistrust my motives in offering these observations to his notice: had I not done so, it is very probable some one else would shortly have made him acquainted with the "American Water Burner," and perhaps might unjustly accuse him of plagiarism at the same time. I am, Sir, very truly yours,

W. H. WEEKES.

Sandwich, October 18, 1833.

In conclusion, we beg to assure our subscribers that we have sent to the Patent Office at Washington for drawings and specifications of the "American Water Buruer," which we fully expect will appear in our January number.

JOURNEYS FROM LONDON TO GREENWICH.—In our last number we had the pleasure of giving an account of the first business-like journey performed by a steam-carriage on common roads; and we cannot but feel gratified at the demand which the accuracy of our information has produced.

It was very generally believed, particularly amongst horse-coach proprietors, that the public would be prejudiced against this new mode of conveyance; and in entering into arrangements for running steam-carriages, this objection has been raised as a reason for reducing the premium required by the patentees, it being stated, that steam-carriages would run for a length of time at a loss, before the public would venture regularly to travel on common roads by steam. Sir Charles Dance, at the time of running between Gloucester and Cheltenham, had never discovered that such a prejudice existed, but that the contrary was really the case, every one appearing desirous of becoming a passenger. This point has however been further set at rest, by the same carriage, (which performed the journey from London to Brighton and back), having run for eight successive days from Wellington street, over Waterloo Bridge, to Greenwich, three times a-day, starting regularly at eleven, half-past twelve, and two o'clock, each day, a distance, in the whole, of about 250 miles, at an average running of ten miles per hour.

In order to call forth as little opposition as possible, from the coachmen and their attendant imps, at the same time to show that the public mind is by no means against the introduction of steam-carriages, Sir Charles Dance determined not to run for the ordinary charge, but the coach was advertised to run for two shillings and sixpence each person, to or from Greenwich, or the sum of four shillings to those who were desirous of going and returning: by such a course it was evident that curiosity would be the principal motive for going with the carriage. We are informed that, on an average, fourteen persons accompanied the carriage each trip. Such has been the interest displayed, that crowds of persons lined the road; and at either end of the journey so dense were the crowds, that, but for the command over the engine, and the accuracy of the driving some serious accident must inevitably have occurred. In some of the journeys, the steam-coach was accompanied by many of our scientific men, amongst others Mr. Telford, Mr. Macneill, and others of our best engineers, who expressed themselves so much gratified with the success of Sir Charles Dance, that they have determined on running the carriage a journey between London and Birmingham, the more fully to demonstrate the practicability of using the power of steam on common roads: and the carriage has been taken off the Greenwich road for this purpose.

We have very carefully examined the steam-carriage, and observed the ease of its running, and believe, that when Messrs. Maudsly and Field shall have completed a carriage, it may be expected to run on an average of fifteen miles an hour, with light weight. It should be understood, that the present carriage was not built by these talented engineers, but that the boiler only is of their manufacture; nor can they venture to use its full power on the engines, as many parts of the carriage are not equal to bear the strain, whilst other parts are too strong and heavy; it may therefore be said, that the carriage, in having performed so much under all the circumstances, has the more positively proved the possibility of bringing this mode of conveyance into general application.

The Brighton road was divided into five stages of rather more than ten miles, at which places the carriage took in coke and water; in running on the Greenwich road the carriage took in for each journey a small quantity of coke and water, sufficient for the five miles run, the two stations for this purpose being one in the Waterloo road and the other at Greenwich. The quantity of coke consumed during the whole time that the carriage has been running with the present boiler, averages nearly half a bushel per mile.—[Repertory of Arts for November.]

Of the Orders of Architecture. [Concluded from page 758.]

CONSTRUCTION OF ARCHES.—If the weights of the voussoirs in an arch are all equal, the arch of equilibration is what is termed a *Catenarian* curve, the same that a chain or cord of uniform thickness would assume, if hanging freely, the horizontal distance of the points of suspension being equal to the span of the arch, and the depth of the lowest point of the chain being equal to the greatest height of the arch.

If the figure of the chain were reversed, the joints being such that the force, which was a *pull* in the first situation, becomes a *thrust* in the second, the chain would support itself, and remain in *equilibrio*.

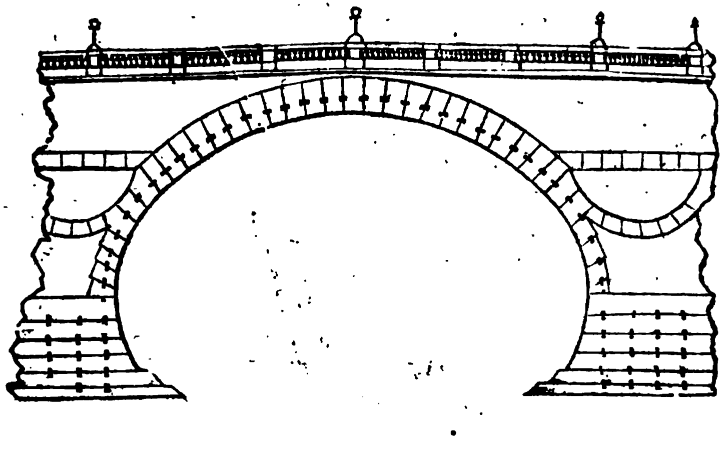
The *catenaria* is remarkable for this mechanical property. That a chain hanging in that curve has its centre of gravity *lower* than if it were disposed in any other line, its length continuing the same, and also the points from which it is suspended. Therefore, an arch constructed in this form has its centre of gravity the *highest* possible.

But the supposition of an arch resisting a weight, which acts only in a vertical direction, is by no means perfectly applicable to cases which generally occur in practice. The pressure of loose stones and earth, moistened as they frequently are by rain, is exerted very nearly in the same manner as the pressure of fluids, which act equally in all directions: and even if they were united into a mass, they would constitute a kind of wedge, and would thus produce a pressure of a similar nature, notwithstanding the precaution recommended by some authors, of making the surfaces of the arch-stones vertical and horizontal only. This precaution is, however, in all respects unnecessary, because the effect which it is intended to obviate is productive of no inconvenience, except that of exercising the skill of the architect. The effect of such a pressure only requires a greater curvature near the abutments, reducing the form nearly to that of an ellipsis, and allowing the arch to rise at first in a vertical direction.

A bridge must also be so calculated as to support itself without being in danger of falling by the defect of the lateral adhesion of its parts, and in order that it may in this respect be of equal strength throughout its depth at each point, must be proportional to the weight of the parts beyond it. This property particularly belongs to the curve denominated *logarithmic*, the length corresponding to the logarithm of the depth. If the strength were afforded by the arch stones only, this condition might be fulfilled by giving them the requisite thickness, independently of the general form of the arch: but the whole of the materials employed in the construction of the bridge must be considered as adding to the strength, and the magnitude of the adhesion as depending in a great measure on general outline.

We must examine in the next place what is the most advantageous form for supporting any weight which may occasionally be placed on the bridge, particularly at its weakest part, which is usually the middle. Supposing the depth at the summit of the arch at the abutments to be given, it may be reduced considerably, in the intermediate parts, without impairing the strength, and the outline may be composed of *parabolic arcs*, having their convexity turned towards each other. This remark also would be only applicable to the arch stones, if they afforded the whole strength of the bridge, but it must be extended in some measure to the whole of the materials forming it.

If, therefore, we combine together the curve best calculated for resisting the pressure of a fluid, which is nearly elliptical, the logarithmic, and the parabolic curves, allowing to each its due proportion of influence, we may estimate, from the comparison, which is the fittest form for an arch intended to support a road. And in general, whether the road be horizontal, or a little inclined, we may infer that an *ellipsis*, not differing much from a circle, is the best calculated to comply as much as possible with all the conditions, as represented by the above figure, which exhibits a view of the middle arch of Blackfriar's Bridge, London.



Babbage on the Economy of Manufactures.

(Concluded from page 809.)

"The many important facilities for the construction of machines and the manufacturing of commodities which we possess, are enjoyed by no other country; nor is it likely that any country can enjoy them to an equal extent for an indefinite period. *It is admitted by every one that our skill is unrivalled; the industry and power of our people unequalled; their ingenuity, as displayed in the continual improvement in machinery, and production of commodities, without parallel, and apparently without limit.* The freedom which, under our government, every man has, to use his capital, his labor, and his talents, in the manner most conducive to his interests, is an inestimable advantage; canals are cut, and railroads constructed, by the voluntary association of persons whose local knowledge enables them to place them in the most desirable situations; and these great advantages cannot exist under less free governments. These circumstances, when taken together, give such a decided superiority to our people, that no injurious rivalry, either in the construction of machinery or the manufacture of commodities, can reasonably be anticipated."

325. But even if it were desirable to prevent the exportation of a certain class of machinery, it appears abundantly evident, that, whilst the exportation of other kinds is allowed, it is impossible to prevent the forbidden kind from being smuggled out; and that, in point of fact, the additional risk had been well calculated by the smuggler.

326. It would appear, also, that there are circumstances which show that the immediate exportation of improved machinery is not quite so certain as has been assumed; and that the powerful principle of self-interest will urge the makers of machinery to push its extension in a different direction. When a great maker of machinery has contrived a new machine for any particular process, or has made some great improvement on those in common use, to whom will he naturally apply for the purpose of selling his new machines? Undoubtedly, in by far the majority of cases, he will communicate the circumstance to his nearest and best customers, those to whom he has immediate and personal access, and whose capability to fulfil any contract is best known to him. He will communicate with them, and offer to take their orders for the new machine; nor will he think of writing to inform foreign customers, so long as he finds the home demand sufficient to employ the whole force of his establishment. Thus, then, the machine-maker is himself interested in giving the first advantage of any new improvement to his own countrymen.

327. In point of fact, the machine-makers in London prefer home orders, and do usually charge an additional price to their foreign customers. Even the amount by which this preference is measured may be found in the evidence before the Committee on the Export of Machinery. It is differently estimated by various engineers, but appears to vary from five up to twenty-five per cent. on the amount of the order. The reasons for this are—1. If the machinery be complicated, one of their best men, well accustomed to the mode of work in the factory, must be sent out to put it up; and there is always a considerable chance of his having offers which will induce him to remain abroad. 2. If the work be of a more simple kind, and can be put up without an English workman, yet for the credit of the house which supplies it, and to prevent accidents which may occur from the want of sufficient instruction in those who use it, the parts are sometimes made stronger, and examined more attentively, than they would be for an English purchaser. Any defect or accident, also, would be attended with more expense to repair, if it occurred abroad, than in England.

328. The class of workmen who make machinery possess much more skill, and are paid much more highly, than that class who merely use it; and, if a free exportation of machinery were allowed, this higher and more valuable class would, undoubtedly, be greatly increased; for, notwithstanding the high price of wages, there is no country in which machinery can at this moment be made, either so well or so cheaply, as in England. We might, therefore, supply the whole world with machinery, at an evident advantage, both to ourselves and our customers. In Manchester, and in the surrounding district, many thousand men are employed wholly in making machinery, which gives employment to many hundred thousands who use it; but the period is not very remote, when the whole number of those who then *made use* of machinery, was not greater than the number of those who now *manufacture* machines. Hence, then, if England should ever become a great exporter of machinery, she would necessarily contain a large class of workmen, to whom skill would be indispensable, and, consequently, to whom high wages would be paid; and, although her manufacturers might probably be fewer in numbers, yet they would undoubtedly have the advantage of being the first to derive profit from improved machinery. Under such circumstances, any diminution in the demand for machinery would, in the first instance, be felt by a class much better able to meet it, than the class which now suffers upon every check in the consumption of manufactured goods; and the resulting misery would therefore assume a mitigated character.

329. It has been feared, that when other countries have purchased our machines, they will cease to demand new ones. The statement which has been given of the usual progress in the improvement of the machinery employed in any manufacture, and of the average time which elapses before it is superseded by such improvements, is a complete reply to this objection. If our customers did not adopt the new machinery contrived by us as soon as they could procure it, then our manufacturers would extend their establishments, and undersell their rivals in their own markets.

330. It may also be urged, that in each kind of machinery a maximum of perfection may be imagined, beyond which it is impossible to advance; and certainly the last advances are usually the smallest, when compared with those which precede them; but it should be observed, that these advances generally occur when the number of machines in employment is already large; and, consequently, their effects on the power producing are very considerable. But though it should be admitted that any individual species of machinery may arrive, after a long period, at a degree of perfection which would render farther improvement nearly hopeless, yet it is impossible to suppose that this can be the case with all kinds of mechanism. In fact, the limit of improvement is rarely approached, except in extensive branches of national manufactures, and the number of such branches is, even at present, very small.

331. Another argument in favor of the exportation of machinery is, that *it would facilitate the transfer of capital to any more advantageous mode of employment which might present itself.* If the exportation of machinery were permitted, there would doubtless arise a considerable demand; and, supposing any particular branch of our manufactures to cease to produce the average rate of profit, the loss to the capitalist would be much less if a market were opened in which he could sell his machinery to customers more favorably circumstanced for its employment. If, on the other hand, new improvements in machinery should be imagined, the manufacturer would be more readily enabled to carry them into effect, by having the foreign market open to him for the sale of his old machines. The fact that England can, notwithstanding her taxation, and her high rate of wages, undersell other nations, seems to be well established; and it appears to depend on the superior goodness and cheapness of those raw materials of machinery, the metals,—on the excellency of the tools,—and on the admirable arrangements of the domestic economy of our factories.

332. The different degrees of facility with which capital can be transferred from one mode of employment to another, has an important effect on the rate of profits in different trades and in different countries. Supposing every other cause which influences the rate of profit at any period, to act equally on capital employed in different occupations, yet the real rates of profit would soon alter, on account of the different degrees of loss in removing it from one mode of investment to another, or any variation in the action of those causes. This principle will appear more clearly by taking an example. Let two capitalists have embarked £10,000 each, in two trades: A in supplying a district with water, by means of a steam engine and iron pipes; B in manufacturing bobbin-net.

The capital of A will be expended in building a house and erecting a steam engine, which costs say £3000: and laying down iron pipes to supply his customers, costing, say £7000. The greatest part of this latter expense is payment for labor; and if the pipes were to be taken up, the damages to them would render them of little value, except as old metal, whilst the expense of removing them would be considerable. Let us, therefore, suppose, that if A were obliged to give up his trade, he could only realize £4000 by the sale of his stock. Let us suppose that B, by the sale of his bobbin-net factory, and machinery, could realize £8000. Farther, let us suppose the usual rate of interest made on the capital employed by each is the same, say 20 per cent.: then we have

	Capital invested.	Money which would arise from sale of machinery.	Annual rate of profit per cent.	Income.
Water-works - -	£10,000	£4,000	£20	£2,000
Bobbin-net Factory	10,000	8,000	20	2,000

Now, if, from competition, or any other causes, the rate of profit arising from water-works should fall to ten per cent., that circumstances would not cause a transfer of capital from water-works to bobbin-net making; because the reduced income from the water-works, £1000 per annum, would still be greater than that produced by investing £4000, (the whole sum arising from the sale of the materials of the water-works,) in a bobbin-net factory; which sum, at 20 per cent., would only yield £800 per annum. In fact, the rate of profit, arising from the water-works, must be reduced below eight per cent., before it would benefit the proprietor's income to remove his capital into the bobbin-net trade.

333. In any inquiry into the probability of the injury arising to our manufacturers from the competition of foreign countries, particular regard should be had to the facilities of transport, and to the existence in our own country of a mass of capital in roads, canals, machinery, &c., the greater portion of which may fairly be considered as having repaid the expense of its outlay, and also to the cheap rate at which the abundance of our fuel enables us to produce iron, the basis of almost all machinery. It has been justly remarked by M. de Villefosse, in the memoir before alluded to, that "Ce que l'on nomme en France, la *question du prix des fers,* est, a proprement parler, la *question du prix des bois,* et *la question des moyens de communications interieures pàr les routes, fleuves, rivieres et canaux.*"

On referring to page 34 of the present volume, the price of iron in various countries in Europe has been stated; and it appears that, in England, it is produced at the least, and in France at the greatest expense. The length of the roads which cover England and Wales may be stated roughly at twenty thousand miles of turnpike, and one hundred thousand miles of road not turnpike. The internal water communication of England and France, as far as I have been able to collect information on the subject, may be stated as follows:—In France, navigable rivers, 4668 miles in length;

navigable canals, 915·5 miles; navigable canal in progress of execution, (1824,) 1388 miles. Total, 6971·5.* But if we reduce these numbers in the proportion of 3·7 to 1, which is the relative area of France as compared with England and Wales, then we shall have the following comparison:

		England.†	Portion of France equal in size to England and Wales.
		Miles.	*Miles.*
Navigable Rivers - - -		1275.5	1261.6
Tidal Navigation‡ - - -		545.9	
Canals, direct -	2023.5	..	
——, branch -	150.6		
	2174.1	2174.1‡	247.4
Canals commenced - - -		..	375.1
Total - - - - - - - -		3995.5	1884.1
Population in 1831 - - -		13,894,500	8,608,500

This comparison, between the internal communications of the two countries, is not offered as complete; nor is it a fair view, to contrast the wealthiest portion of one country with the whole of the other: but it is offered with the hope of inducing those who possess more extensive information on the subject, to supply the facts on which a better comparison may be instituted. The information to be added would consist of the number of miles in each country, of sea-coast,—of public roads,—of railroads,—of railroads on which locomotive engines are used.

334. One point of view, in which rapid modes of conveyance increase the power of a country, deserves attention. On the Manchester railroad, for example, above half a million of persons travel annually; and supposing each person to save only one hour in the time of transit, between Manchester and Liverpool, a saving of five hundred thousand hours, or of fifty thousand working days, of ten hours each, is effected. Now this is equivalent to an addition to the actual power of the country of one hundred and sixty-seven men, without increasing the quantity of food consumed; and it should also be remarked, that the time of the class of men thus supplied is far more valuable than that of mere laborers.

ON THE FUTURE PROSPECTS OF MANUFACTURES, AS CONNECTED WITH SCIENCE.

335. In reviewing the various processes which have been offered in the course of the present volume, as illustrations of those general principles which it has been its main object to support and establish, it is impossible not to perceive that the arts and manufactures of the country are intimately connected with the progress of the severer sciences; and that, as we advance in the career of improvement, every step requires, for its success, that this connection should be rendered more intimate.

The applied sciences derive their facts from experiment; but the reasonings, on which their chief utility depends, come more properly within the province of what is called abstract science. It has been shown, that the division of labor is no less applicable to mental productions than to those in which material bodies are concerned; and it follows, that the efforts for the improvement of its manufactures, which any country can make with the greatest probability of success, must arise from the combined exertions of all those most skilled in the theory, as well as in the practice of the art; each laboring in that department for which his natural capacity and acquired habits have rendered him most fit.

336. The profits arising from the successful application to practice of theoretical principles will, in most cases, amply reward, in a pecuniary sense, those by whom they are first employed: yet, even here, what has been stated with respect to *patents* will prove that there is room for considerable amendment in our legislative enactments: but the discovery of the great principles of nature demands a mind almost solely devoted to such investigations; and these, in the present state of science, frequently require costly apparatus, and exact an expense of time quite incompatible with professional avocations. It becomes, therefore, a fit subject for consideration, whether it would not be politic in a state to compensate for some of those privations to which the cultivators of the higher departments of science are exposed; and the best mode of effecting this compensation is a question which interests both the philosopher and the statesman. Such considerations appear to have had their just influence in other countries, where the pursuit of science is regarded as a profession, and where those who are successful are not shut out from almost every object of honorable ambition to which their fellow-countrymen may aspire. Having, however, already expressed some opinion upon these subjects in another publication,* I shall here content myself with referring to that work.

337. But it is of something beyond neglect, of which the science of England complains: for whilst in our own country, whose advancement in wealth and strength so peculiarly depends upon the aid of the sciences, no encouragement is held out to that which must ever precede their application to the practical purposes of life; whilst abstract science, the prolific parent of the useful arts—the unfailing guide in tracing to their remotest conclusions the natural laws which observations may have detected—is allowed by the state to entail upon its cultivators the sacrifice of all those personal interests which the exercise of the same powers of mind might command in any other pursuit: Englishmen are precluded from accepting those distinctions from the enlightened sovereigns of other countries, by which they might desire to express their respect for British science.†

There was, indeed, in our own country, one single position to which science, when concurring with independent fortune, might aspire, as conferring rank and station; an office deriving, in the estimation of the public, more than half its value from the commanding knowledge of its possessor; and it is extraordinary, that even that solitary dignity—that barony by tenure in the world of British science—the chair of the Royal Society,—should have been coveted for adventitious rank. It is more extraordinary, that a prince, distinguished by the liberal views he has invariably taken of public affairs—and eminent for his patronage of every institution calculated to alleviate those miseries from which, by his rank, he is himself exempted—who is stated by his friends to be the warm admirer of knowledge, and most anxious for its advancement,—should have been so imperfectly informed by those friends, as to have wrested from the head of Science the only civic wreath which could adorn its brow.‡

In the meanwhile the President may learn, through the only medium by which his elevated station admits approach, that those evils which were anticipated from his election have not proved to be imaginary, and that the advantages by some expected to result from it, have not yet become apparent. It may be right also to state, that whilst many of the inconveniences which have been experienced by the President of the Royal Society have resulted from the conduct of his own supporters, those who were compelled to differ from him have subsequently offered no vexatious opposition: they wait in patience, convinced that the force of truth must ultimately work its certain, though silent course; and not doubting that, when His Royal Highness is correctly informed, he will himself be among the first to be influenced by its power.

338. But younger institutions have arisen to supply the deficiencies of the old; and very recently a new combination, differing entirely from the older societies, promises to give additional steadiness to the future march of science. The "*British Association for the Promotion of Science*," which held its first meeting at York, in the year 1831, would have acted as a powerful ally, even if the Royal Society were all that it might be: but in the present state of that body, such an association is almost necessary for the purposes of science. The periodical assemblage of persons, pursuing the same or different branches of knowledge, always produces an excitement which is favorable to the developement of new ideas; whilst the long period of repose which succeeds, is advantageous for the prosecution of the reasonings or the experiments then suggested: and the recurrence of the meeting in the succeeding year will still stimulate the activity of the inquirer, by the hope of being then enabled to produce the successful result of his labors. Another advantage is, that such meetings bring together a much larger number of persons actively engaged in science, or placed in positions in which they can contribute to it, than can ever be found at the ordinary meetings of other societies, even in the most populous capitals; and combined efforts towards any particular object can thus be more easily arranged.

But perhaps the greatest benefit which will accrue to science from these assemblies, is the intercourse which they cannot fail to promote between the different classes of society. The man of science will derive practical information from the great manufacturers; the chemist will be indebted to the same source for substances which exist in such minute quantity as only to become visible in most extensive operations; and persons of wealth and property, resident in each neighborhood visited by these migratory assemblies, will derive greater advantages than either of those classes, from the real instruction they may procure respecting the produce and manufactures of their country, and the enlightened gratification which is ever attendant on the acquisition of knowledge.*

339. Thus, it may be expected that public opinion shall be brought to bear upon the world of science; for by this intercourse light will be thrown upon the characters of men, and the pretender and the charlatan will be driven into merited obscurity. Without the action of public opinion, any administrator, however anxious to countenance the pursuits of science, and however ready to reward by wealth and honors those whom they might think most eminent, would run the risk of acting like the blind man recently couched, who, having no mode of estimating degrees of distance, mistook the nearest and most insignificant for the largest objects in nature: it becomes, therefore, doubly important, that the man of science should mix with the world.

It is highly probable that in the next generation, the class of scientific men in England will spring from a class of persons altogether different from that which has hitherto scantily supplied them. Requiring, for the success of their pursuits, previous education, leisure, and fortune, few are so likely to unite these essentials as the sons of our wealthy manufacturers, who, having been enriched by their own exertions, in a field connected with science, will be ambitious of having their children distinguished in its ranks. It must, however, be admitted, that this desire in the parents would acquire great additional intensity, if worldly honors occasionally followed successful efforts; and that the country would thus gain for science, talents which are frequently rendered useless by the unsuitable situations in which they are placed.

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* This statement is extracted and reduced from one in the Ravinet Dictionnaire Hydrographique, 2 vols. 8vo. Paris, 1824

‡ I am indebted to F. Page, Esq of Speen, for that portion of this table which relates to the internal navigation of England: those only who have themselves collected statistical details, can be aware of the time and labor, of which the few lines in the above table are the result.

‡ The tidal navigation includes—the Thames from the mouth of the Medway,—the Severn from the Holmes,—the Trent from Trent Falls in the Humber,—the Mersey from Runcorn Gap.

* Reflections on the Decline of Science in England, and on some of its Causes. 8vo. 1830. Fellowes

† The intentions of a Northern Sovereign, distinguished by his attachment to science, were some time ago defeated by information from his ambassador in London, of the existence of the regulation by which it was understood that the acceptance of such honor by British subjects is forbidden.

‡ The Duke of Sussex was proposed as President of the Royal Society, in opposition to the wish of the Council—in opposition to the public declaration of a body of Fellows, comprising the largest portion of those by whose labors the character of English science had been maintained. The aristocracy of rank and power, aided by such allies as it can always command, set itself in array against the prouder aristocracy of science. Out of about seven hundred members, only two hundred and thirty balloted; and the Duke of Sussex had a majority of EIGHT. Under such circumstances, it was, indeed, extraordinary that his Royal Highness should have condescended to accept the fruits of that doubtful and inauspicious victory.

The circumstances preceding and attending this singular contest have been most ably detailed in a pamphlet, entitled, "A Statement of the Circumstances connected with the late Election for the President of the Royal Society. 1831: printed by R. Taylor, Red Lion court, Fleet street." The whole tone of the tract is strikingly contrasted with that of the productions of some of those persons by whom it was his Royal Highness's misfortune to be supported.

* The advantages likely to arise from such an association have been so clearly stated in the address delivered by the Rev Mr. Vernon Harcourt, at its first meeting, that I would strongly recommend its perusal by all those who feel interested in the success of English science.—[Vide First Report of the British Association for the Advancement of Science. York, 1832.]

340. The discoveries of Iodine and Brome, two substances hitherto undecompounded, were both amongst the class of manufacturers, one being a maker of saltpetre at Paris, the other a manufacturing chemist at Marseilles: and the inventor of balloons filled with rarified air, was a paper manufacturer near Lyons. The descendants of Mongolfier, the first aerial traveller, still carry on the establishment of their progenitor, and still continue to combine great scientific knowledge with every department of the arts, to which the various branches of the family have applied themselves.

341. Chemical science may, in many instances, be of great importance to the manufacturer, as well as to the merchant. The quantity of Peruvian bark which is imported into Europe is very considerable; but chemistry has recently proved that a large portion of the bark itself is useless. The alkali Quinia, which has been extracted from it, possesses all the properties for which the bark is valuable, and only forty ounces of this substance, when in combination with sulphuric acid, can be extracted from a hundred pounds of the bark. In this instance, then, with every ton of useful matter, thirty-nine tons of rubbish are transported across the Atlantic.

At the present time, the greatest part of the sulphate of quinia used in this country is imported from France, where the low price of the alcohol, by which it is extracted from the bark, renders the process cheap; but it cannot be doubted, that when more settled forms of government shall have given security to capital, and when advancing civilization shall have spread over the states of Southern America, the alkaline medicine will be extracted from the woody fibres, by which its efficacy is almost lost, and that it will be exported in its most condensed form.

342. The aid of chemistry, in extracting and in concentrating substances used for human food, is of great use in distant voyages, where the space occupied by the stores must be economized with the greatest care. Thus, the essential oils supply the voyager with flavor—the concentrated and crystallized acids preserve his health—and alcohol, when sufficiently diluted, supplies the spirit necessary for his daily consumption.

343. When we reflect on the very small number of species of plants, compared with the multitude that are known to exist, which have hitherto been cultivated, and rendered useful to man, and when we apply the same observation to the animal world, and even to the mineral kingdom, the field that natural science opens to our view seems to be indeed unlimited. These productions of nature, numerous and varied as they are, may each, in some future day, become the basis of extensive manufactures, and give life, employment, and wealth, to millions of human beings. But the crude treasures perpetually exposed before our eyes contain within them other and more valuable principles. All these, in their innumerable combinations, which ages of labor and research can never exhaust, may be destined to furnish, in perpetual succession, new sources of our wealth and of our happiness. Science and knowledge are subject, in their extension and increase, to laws quite opposite to those which regulate the material world. Unlike the forces of molecular attraction, which cease at sensible distances, or that of gravity, which decreases rapidly with the increasing distance from the point of its origin, the farther we advance from the origin of our knowledge, the larger it becomes, and the greater power it bestows upon its cultivators, to add new fields to its dominions. Yet, does this continually and rapidly increasing power, instead of giving us any reason to anticipate the exhaustion of so fertile a field, place us at each advance on some higher eminence, from which the mind contemplates the past, and feels irresistibly convinced, that the whole, already gained, bears a constantly diminishing ratio to that which is contained within the still more rapidly expanding horizon of our knowledge.

But, if the knowledge of the chemical and physical properties of the bodies which surround us, as well as our acquaintance with the less tangible elements, light, electricity, and heat, which mysteriously modify or change their combinations, all concur to convince us of the same fact; we must remember that another and a higher science, itself still more boundless, is also advancing with a giant's stride, and having grasped the mightier masses of the universe, and reduced their wanderings to laws, has given to us, in its own condensed language, expressions, which are to the past as history, to the future as prophecy. It is the same science which is now preparing its fetters for the minutest atoms that nature has created: already it has nearly chained the ethereal fluid, and bound it in one harmonious system all the intricate and splendid phenomena of light. It is the science of *calculation*,—which becomes continually more necessary at each step of our progress, and which must ultimately govern the whole of the applications of science to the arts of life.

But perhaps a doubt may arise in the mind, whilst contemplating the continually increasing field of human knowledge, that the weak arm of man may want the physical force requisite to render that knowledge available. The experience of the past has stamped, with the indelible character of truth, the maxim, that "*Knowledge is power.*" It not merely gives to its votaries control over the mental faculties of their species, but is itself the generator of physical force. The discovery of the expansive power of steam, its condensation, and the doctrine of latent heat, has already added to the population of this small island, millions of hands. But the source of this power is not without limit, and the coal-mines of the world may ultimately be exhausted. Without adverting to the theory, that new formations of that mineral are now depositing under the sea, at the estuaries of some of our larger rivers; without anticipating the application of other fluids requiring a less supply of caloric than water: we may remark that the sea itself offers a perennial source of power hitherto almost unapplied. The tides, twice in each day, raise a vast mass of water, which might be made available for driving machinery. But supposing heat still to remain necessary when the exhausted state of our coal-fields renders it expensive: long before that period arrives, other methods will probably have been invented for producing it. In some districts, there are springs of hot water, which have flowed for centuries unchanged in temperature. In many parts of the island of Ischia, by deepening the sources of the hot springs but a few feet, the water boils: and there can be little doubt that, by boring a short distance, steam of high pressure would issue from the orifice.*

In Iceland, the sources of heat are still more plentiful; and their proximity to large masses of ice seems almost to point out the future destiny of that island. The ice of its glaciers may enable its inhabitants to liquify the gases with the least expenditure of mechanical force: and the heat of its volcanoes may supply the power necessary for their condensation. Thus, in a future age, *power* may become the staple commodity of the Icelanders, and of the inhabitants of other volcanic districts; and possibly the very process by which they will procure this article of exchange for the luxuries of happier climates may, in some measure, tame the tremendous element which occasionally devastates this province.

344. Perhaps to the sober eye of inductive philosophy, these anticipations of the future may appear too faintly connected with the history of the past. When time shall have revealed the future progress of our race, those laws which are now obscurely indicated will then become distinctly apparent; and it may possibly be found that the dominion of mind over the material world advances with an ever-accelerating force.

Even now, the imprisoned winds which the earliest poet made the Grecian warrior bear for the protection of his fragile bark; or those which, in more modern times, the Lapland wizards sold to the deluded sailors; these, the unreal creations of fancy or of fraud, called, at the command of science, from their shadowy existence, obey a holier spell: and the unruly masters of the poet and the seer become the obedient slaves of civilized man.

Nor has the wild imagination of the satirist been quite unrivalled by the realities of after years: as if in mockery of the College of Laputa, light almost solar has been extracted from the refuse of fish; fire has been sifted by the lamp of Davy; and machinery has been taught arithmetic instead of poetry.

345. In whatever light we examine the triumphs and achievements of our species over the creation submitted to its power, we explore new sources of wonder. But if science has called into real existence the visions of the poet—if the accumulating knowledge of ages has blunted the sharpest, and distanced the loftiest of the shafts of the satirist, the philosopher has conferred on the moralist an obligation of surpassing weight.

In unveiling to him the living miracles which teem in rich exuberance around the minutest atom, as well as throughout the largest masses of ever-active matter, he has placed before him resistless evidence of immeasurable design. Surrounded by every form of animate and inanimate existence, the sun of science has yet penetrated but through the outer fold of Nature's majestic robe; but if the philosopher were required to separate, from amongst those countless evidences of creative power, one being, the masterpiece of its skill; and from that being to select one gift, the choicest of all the attributes of life; turning within his own breast, and conscious of those powers which have subjugated to his race the external world, and of those higher powers by which he has subjugated to himself that creative faculty which aids his faltering conceptions of a deity,—the humble worshipper at the altar of truth would pronounce that being,—man: that endowment,—human reason.

But however large the interval that separates the lowest from the highest of those sentient beings which inhabit our planet, all the results of observation, enlightened by all the reasonings of the philosopher, combine to render it probable that, in the vast extent of creation, the proudest attribute of our race is but, perchance, the lowest step in the gradation of intellectual existence. For, since every portion of our own material globe, and every animated being it supports, afford, on more scrutinizing inquiry, more perfect evidence of design, it would indeed be most unphilosophical to believe that those sister spheres, glowing with light and heat, radiant from the same central source—and that the members of those kindred systems, almost lost in the remoteness of space, and perceptible only from the countless multitude of their congregated globes—should each be no more than a floating chaos of unformed matter; or, being all the work of the same Almighty Architect, that no living eye should be gladdened by their forms of beauty, that no intellectual being should expand its faculties in deciphering their laws.

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* In 1828, the author of these pages visited Ischia, with a Committee of the Royal Academy of Naples, deputed to examine the temperature and chemical constitution of the springs in that island. During the first few days, several springs, which had been represented in the instructions as under the boiling temperature, were found, on deepening the excavations, to rise to the boiling point.

The following curious account of a new and important invention by Capt. Ericsson, is taken from the London Times of the 9th November. The subject is appears to have attracted considerable attention in England, and it will probably, if it should succeed according to the expectations of the inventor, produce important changes in the propelling power for machinery, travelling, &c.

We shall look for further accounts upon the subject with much interest, and lay them, when they are received, promptly before the public.

Ericsson's Caloric Engine.—Various attempts have been made to construct engines founded on the principle of the expansion of atmospheric air by heat, but these attempts have still remained without practical success. The caloric engine invented by Capt. Ericsson, a large working model of which we have seen in vigorous operation, seems to promise results of a very different kind. Air and steam must now engage in a desperate and probably a deadly struggle for the mastery. If the sanguine, and we think not unreasonable, hopes of the inventor be realized, steam has seen its best days.

The principle of the engine is founded on the well known property of fluids, that they transmit their pressure equally in all directions. It consists of two cylinders of unequal diameters, the area of the pistons of the one being double that of the other. These cylinders are connected together by means of a series of pipes, called a regenerator. If air be condensed in these cylinders, it is obvious that the superior pressure exerted on the piston of the large cylinder will vanquish the pressure on the small one, and motion will take place till the larger piston has reached the top of the cylinder, whilst the small one has been pushed to the bottom. Here all motion would cease, if heated condensed air were not allowed to enter above the large piston, and below the small one, so as to depress the large one to the bottom of the cylinder, and raise the smaller one to the top. But this being done by sliding valves, exactly as in the steam engine, the motion is constantly kept up. On this principle, then, we could obviously have an air engine, which would perform its operations by the sudden heating and cooling of condensed atmospheric air. But this is not the principle which distinguishes the caloric engine from others of the same class. The marked difference lies in this—that the same heat is made to circulate through the engine and perform the same duty over and over again, instead of being thrown into a cold condenser or into the atmosphere as so much waste fuel.

The regenerator consists of a number of pipes, having numerous discs of metal placed within them, to make the air circulate in eddies, and either deposite its heat in the pipes, or receive it from them, according to the difference of temperature. These pipes are inclosed in a long cylinder of sheet iron, which has also discs of metal so arranged that the air, passing along the outside of the pipes, may also travel in a circuitous route, and deposit its heat, or receive it, according to circumstances.

The heated air, after having done its duty in the large cylinder, is made to circulate through the regenerator, and deposit a very large quantity of its caloric before it reaches the cold cylinder. The cold air from the small cylinder is at the same time passing along the interior of the pipes to the tubes above the furnace, and is thus carrying back the *same* caloric to do the same work over again. But though we have only mentioned atmospheric air as the fluid actually employed, it is obvious that any other fluid, whether aeriform or liquid, may be used in the same manner. But a simple statement of numerical facts, furnished us by the engineer himself, will be of more value in turning the attention of the public to this invention than any general observations which we can possibly make. The engine actually constructed has two cylinders of 18 inches stroke each, the one being 14 inches in diameter, the other 10 1-4 inches. The working pressure is 85 lbs. above that of the atmosphere. The fly-wheel performs 56 revolutions in a minute. The break-wheel is two feet in diameter, and loaded with a weight of 5,200 lbs. The power of the engine is calculated to be equal to five horses. The regenerator has seven tubes about seven feet long and two inches diameter. The engine requires only 2 lbs. of coal per hour for the power of one horse, and the whole heat which is actually lost out of this quantity, or not returned by the regenerator, is only 3 lbs. per hour; so that the other parts are lost by radiation, &c., which may be much diminished in an engine on a larger scale, and by surrounding certain parts by imperfect conductors.

Smoky Chimneys.—Among the many sufferings arising from the limited diffusion of science, that from smoky fire-places is by no means the least. Independent of the direct inconvenience of smoke in the room, dangerous colds are often taken from hoisted windows or opened doors. What a beautiful picture of comfort is presented on entering, in cold December day an apartment, the inmates of which have red and tearful eyes, and stand or sit shivering in currents of cold air! Count Rumford observes that the general fault of common chimneys is the greatness of the opening at the throat. The following is a condensed view of some of his rules:

Fig. 1.

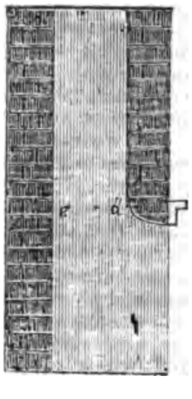
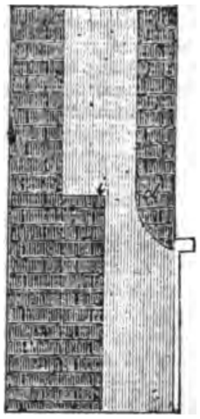
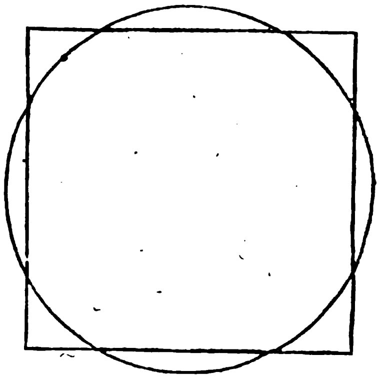


Fig. 2.



"1. The *throat* of the chimney should be perpendicularly over *the fire*, as the smoke and hot vapor which rise from a fire naturally tend *upwards*. By the *throat* of a chimney is meant the lower extremity of its canal, where it unites with the upper part of its open fireplace. 2. The nearer the throat of a chimney is to the fire the stronger will be its *draught*, and the less danger of its smoking; since smoke rises in consequence of its rarefaction by heat, and the heat is greater nearer the fire than at a greater distance from it. But the draught of a chimney may be too strong, so as to consume the fuel too rapidly; and, therefore, a due medium must be fixed upon, according to circumstances. 3. That *four inches* is the proper width to be given to the throat, reckoning across from the top of the breast of the chimney, or the inside of the mantle to the back of the chimney; and even in large halls, where great fires are kept up, this width should never be increased beyond 4½ or 5 inches. 4. The width given to the back of the chimney should be about *one-third* of the width of the opening of the fireplace in front. In a room of middling size, *thirteen inches* is a good size for the width of the back, and 3 times 13 or 39 inches for the width of the opening of the fireplace in front. 5. The angle made by the back of the fireplace and the sides of it, or covings, should be 135°, which is the best position they can have for throwing heat into the room. 6. The back of the chimney should always be built *perfectly upright*. 7. Where the throat of the chimney has an end, that is to say, where it enters into the lower part of the open canal of the chimney, *there* the three walls which form the two covings and the back of the fireplace should *all end abruptly*, without any slope, which will render it more difficult for any wind from above to force its way through the narrow passage of the throat of the chimney. The back and covings should rise 5 or 6 inches higher than the breast of the chimney. 8. The current of air, which, passing under the mantle, gets into the chimney, should be made *gradually to bend its way upwards*; by which means it will unite *quietly* with the ascending current of smoke. This is effected with the greatest ease and certainty, merely by *rounding off* the breast of the chimney, or back part of the mantle, instead of leaving it flat or full of holes and corners. Fig. 1 shows the section of a chimney on the common construction, in which *d e* is the throat. Fig. 2 shows a section of the same chimney altered and improved, in which *d i* is the reduced throat, four inches in the direction *d i*, and thirteen inches in a line parallel to the mantle."



Mechanical Quadrature of the Circle. By William Baddeley. [From the London Mechanics' Magazine.]

Sir,—The accompanying diagram exhibits a mechanical quadrature of the circle effected by Mr. Heaton, which I believe to be quite original; the rule thereby obtained is sufficiently accurate for all practical purposes. From a piece of carefully rolled sheet brass was cut out a circle 1·9 inches diameter, and a square of 1·7 inches. On weighing them they were found to be of exactly the same weight, which proves that as each are of the same thickness, the surfaces must also be precisely similar. The rule, therefore, is that the square is to the circle as 17 is to 19. Mr. Heaton made a number of experiments before he hit upon the right measurement, which he has at length determined with as much accuracy as the case will admit of.

I am, sir, yours, very respectfully,
William Baddeley.
London, Aug. 19, 1833.

Mechanics in China.—It is said there are in China, 25,000 shoemakers; 15,000 weavers; 16,000 carpenters and cabinetmakers; and 7,000 lapidaries, or cutters of precious stones.

SUMMARY.

Naval Lyceum.—This new association is exciting the interest of our citizens, and we have to day seen a most beautiful volume of colored engravings representing the naval battles of Great Britain from 1793 to 1817, which, with other books, was presented by one of our public spirited merchants to the Library of the Lyceum.

United States Naval Lyceum.—At an adjourned meeting of the U. S. Naval Lyceum held on Wednesday the 18th December 1833,

It was unanimously resolved that all Passed Midshipmen of the U. S. Navy be invited to become members of the Society, and that all Midshipmen not passed, be invited to avail themselves of the benefits of the Institution, by having free access to the Library, papers, &c.

The Lyceum also return their thanks for valuable donations to General Fleming, Professor Anthon, N. Prime Esq. Messrs. N. and T. White, Charles De Behr, T. and W. White and P. S. Chauncey.

At a special meeting of the United States Naval Lyceum, held on Monday, the 23d inst., it was unanimously Resolved, That the thanks of this Society be presented to the following distinguished gentlemen of the city of New York, New Jersey, and the Navy, for their liberal donations, and valued patronage extended towards the Institution:

Messrs. Goodhue & Co.
Charles King, Esq.
Capt. Wm. Bolton, U. S. N.
Messrs. G. G. & S. Howland
Messrs. D. Appleton & Son
Samuel Swartwout, Esq.,
and the officers and clerks
of the Custom House.
Peter Harmony, Esq.
James G. King, Esq.
Charles A. Davis, Esq.
George Dearborn, Esq.
Wm. Wood, Esq.
John Travers, Esq.
John Lang, Esq.
Rev. Wm. Patten,

The Editors of the New York Standard, Courier & Enquirer, Gazette, Evening Star, American, and Constellation.

Brooklyn Naval Lyceum.—This institute of the brave is receiving many tributes, and bids fair to become one of the first literary *bazaars* in the United States. Among the number of donors we observe the names of General Fleming, Doctor Hosack, Washington Irving, John Pintard, and Doctor Milnor.

This office continues to receive any donations for the Lyceum.—[Courier and Enquirer.]

Danby's sublime picture of the Opening of the Sixth Seal will be removed almost immediately after New Year. We therefore advise those who have not seen it, to profit by the intermediate time. To those strangers whom the Christmas festivities may assemble in the city, we particularly recommend this painting.

Com. Elliot has presented to the Mariner's Church of Charleston, a baptismal vase, formed out of the timber of the Frigate Constitution so celebrated in our history.

Very Exemplary Damages.—Mr. James Currin and Miss Smith, who were sometime since thrown from a gig and seriously injured, brought their suits against the town of Lowell in which the road was situated. The case has been tried within a few days before the Supreme Court of Massachusetts now sitting at Cambridge, and Mr. Currin recovered a verdict of $4000, and Miss Smith one of $3000.

A Temperance Match.—*Col. Haskett challenged for* 3000 *miles.*—A match for this distance has been entered into between a gentleman of Georgia and Col. Haskett. The match will come off on the first of June, over the road between Taunton and Boston. The challenger is to eat per day, as a *minimum* allowance, 1 lb. beef, 1 lb. bread, and to drink 3 glasses of 4th proof brandy and a half pint Madeira. The parties are to be on the road at the day, or half forfeit. The challenger set forth the bet at $5000 to $20,000, but the money matters are to be adjusted in Carolina. The Col. is to eat per day his old allowance of bread and water. We shall have an opportunity of seeing the relative virtue of the bread and water and beef and rum. The agent of the challenged arrived a few days ago, and leaves to examine the road next week, and have it measured.—[Boston Centinel.]

Lotteries.—"Who will not rejoice (says the Gazette of this morning) to learn, that after the end of this month, no Lottery Tickets can be sold in this State? and that yesterday afternoon the last Lottery was Drawn.

The Packet ship Ontario, Capt. Sebor, from London, arrived yesterday afternoon, and ran into Quarantine, where she was detained by the boarding physician. She has on board three cabin, and one hundred steerage passengers.—[Standard.]

According to the Gazette, more than 50 cases of small pox exist on board.

A steamboat arrived last evening from Poughkeepsie, with the mail and passengers from Albany, who came down to that place the greater part of the way in sleighs, there being plenty of snow above Rhinebeck.—[Ibid.]

Five lighters came up from Rockaway beach yesterday morning, loaded with four thousand bars of iron, about two hundred sacks of salt, and a few other articles, being part of the cargo of the British barque Atlantic, from Liverpool, that was cast away at that place on the 9th inst. The wreck went to pieces on Tuesday, during the storm. The fragments were sold for $73.—[Ibid.]

We are pleased to learn that the Government have finally purchased and received a title for the ten feet of ground adjoining their property in Pine street, preparatory to the immediate commencement of the work of building the Custom House, on the site so long since, and so judiciously selected by the Secretary of the Treasury.

We congratulate the merchants on the removal of this last obstacle, in doing which they have had an opportunity of again manifesting the liberality and public spirit which have actuated them in this business throughout. We learn that the price which the Government paid for this ten feet of ground, was what the Commissioners under the peculiar circumstances of the case, with great liberality, estimated it to be worth, viz. 17,500 dollars. The owner however, declined to sell it at that price, demanded and received 20,500. The difference of $3000 was paid to the owner by a gentleman in behalf of the merchants—who, we understand, have promptly and with their accustomed liberality agreed to refund this sum.—[Evening Post.]

[*From the Cherokee Phœnix, Nov. 23d.*]

The National Council convened at Red Clay, on the 14th Oct., and after the meeting of the two houses, and a full attendance of the members from all the Districts of the Nation, the Principal Chief delivered his speech to the General Council, which will be found on our first page. Among the various acts of this Council and of general interest to the Cherokees, is the appointment of a delegation, to proceed to the Congress of the United States, pursuant to the Report of the Select Committee which follows the speech of the Chief. The Council then proceeded to the consideration of various matters which came before them, and after the appointment of the following delegates, Messrs. John Ross, Richard Taylor, Daniel McCoy, Hare Conrad, and John Timson; the Council adjourned on the 1st Nov. to meet again on the second Monday of Oct. 1834.

Earthquake.—By advice from the Pacific, we learn that the towns of Arica and Tacua, in Peru, were almost destroyed by an Earthquake on the 18th of September. We have received no particulars.—[Jour. of Com.]

The Gale of last week.—The Georgetown (Delaware) Luminary, thus speaks of this gale, which was most severe on Monday night. The case of the black man forced to choose between his own destruction with that of all his family, or safety to himself at their expense, was a very hard one.

The tide rose several feet above the Delaware Breakwater, sweeping off several houses that had been erected thereon and carrying them completely over the beach, by which several lives were lost, beside five or six dead bodies that have come ashore on the beach since the storm. There are said to be *eleven* vessels on the beach, among which is a ship and two brigs, all of which lay under the Breakwater in supposed security, but the tide rising above it, they were entirely at the mercy of the tempest. What extent of damage they sustained, or number of lives lost, we have not been able to ascertain. Two vessels, we understand, were lost in Indian River, one belonging to Mr. Miers Burton, commanded by Haslet Streets, a colored man, who was drowned, together with all on board. The vessel sunk with 600 bushels of Corn on board. The other vessel belonged to a Mr. Vent, Captain Morris—whether the crew were lost or not, we have not ascertained. Among the distress which has come to our knowledge from those residing adjacent to the shore, is that of a black family residing in Slaughter neck, consisting of a man, his wife, grandmother and five children, all of whom were drowned but the man. His statement is truly distressing; he could not speak for several hours after his arrival at the nearest house, about a mile and a quarter distant from his residence. Upon the water breaking into the house, he and his family became alarmed, got out of their beds and left the house without even dressing themselves. He said he first took up his grandmother and proceeded some distance through the water, which was nearly breast high, when he found his wife was about to give out, he left his grandmother and four children to die, and took up his wife and one child, but had proceeded only a short distance, when he felt himself sinking, and shook them off to die, (oh inhuman!) when he succeeded with great difficulty in reaching the upland, having only strength left to crawl to the nearest house. Considerable loss has been sustained in Cattle and Sheep, several farmers losing their entire stock. The furnace at Millsborough was put out on Saturday night, this being the third time that the fire has been thus put out.

We understand that the Delaware Breakwater will have to be raised six feet higher than was anticipated, and before they will again venture to erect buildings on it.

NEW-YORK AMERICAN.

DECEMBER 21, 23, 24, 25, 26, 28—1833.

LITERARY NOTICES.

We commence our Review to-day, as we propose to do hereafter, with one of the excellent letters of our travelling correspondent H. His last, described *Braddock's field:* the present one spreads tangibly before the eye, Pittsburg, and all its prosperous industry.

No. VIII.

Pittsburg, Nov. 8.

There is no place in the Western country, as Judge Baldwin observed, in his address before the Mechanics' Institution of Pittsburgh, "which can more justly boast of its small beginnings, its rapid but solid growth, and its future greatness," than this. It is about seventy years since General Washington, then a young fellow of two and twenty, was despatched by Governor Dinwiddie of Virginia, to the French commander on Le Bœuf, (near Erie,) to demand that he should desist from aggression upon the British frontier. The young officer, upon his return down the Alleghany upon a raft made with tomahawks, was wrecked with a single Indian attendant, upon an island near the present city of Pittsburgh. The situation of the point of land formed by "the forks of the Ohio," at once caught his military eye; and crossing on the ice in the morning, he examined the position with sufficient minuteness to impress his commander with its importance. The spot was soon after taken possession of by a small colonial force, which in 1754 was easily dispersed by the formidable descent of the French under Contrecœur. He came with a thousand men at his back, and floated various munitions of war, among which were eighteen pieces of cannon, in three hundred and sixty canoes, down the Alleghany. The blow was struck which commenced the old French war, that lost France all her possessions east of the Mississippi. Contrecœur, entrenched himself upon the spot, and the bloody annals of Fort *Du Quesne* received their first notoriety from this bold invader.

Thirty years afterwards, the place now become known as fort Pitt, began to assume commercial importance, from the Indian fur trade then carried on with vigor from this point. An increase of population ensued, the extensive coal beds in the vicinity began to be appreciated; they indicated the prodigious manufacturing resources of the rising town of Pittsburgh. The adjacent country became rapidly populated and it was soon the agricultural depot for the rich region on this side of the Alleganies. The genius of Fulton matured at once the rising fortunes of Pittsburgh and gave her a market for her overflowing productions.

Situated two thousand miles from New Orleans, by the aid of steam she supplies the whole of the intermediate region with hardware, machinery, and cutlery.* But it is not for this manufacture alone, that Pittsburgh, though often called the "Birmingham of America," is celebrated. Her extensive Glass-works are well known even beyond the Alleganies, and this fragile production of her workshops, finds its way alike to the borders of Lake Erie and of the Atlantic and may be met in the elegant mansions of Baltimore and the remote shantees of the Arkansaw.

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*Bloom iron, I am told, is brought hither for manufacture, from the forges on the Juniata, from Tennessee, Kentucky, and Missouri, and contracts are frequently made for $38 per Ton to take the blooms at St. Louis and return them rolled iron, The timber trade, is another great feature in the business relations of Pittsburgh; the boards and scantling measured within the city in 1830 amounted to more than five millions of feet; of this a great deal was floated down the branches of the Allegany river from the south western counties of New York. The romantic hills of Chatauque county, supply not a few of the stately trunks which, after being hewn into shape at Pittsburgh subsequently float the varied products of Northern industry, through many a stranger climate to the rich markets of Louisiana. You will not wonder, therefore, that the freight exported from Pittsburgh in 1830 amounted to upwards of 18,000 tons, its imports for the same year being more than 14,000 tons. The city is now, with the adjacent village of Allegany town, and Lawrenceville on the Allegany, and Birmingham and Manchester on the Monongahela, the third town in population, wealth, and importance, in the Mississippi valley. Next to its admirable situation, the flourishing condition of the place, is no doubt to be mainly attributed to the inexhaustible quantities of fine bituminous coal, which may be had for the digging in all the adjacent hills. Pittsburgh is however, indebted to the character of her early settlers for her present eminence; they were chiefly mechanics, enterprising, industrious, practical minded men; the improvements they commenced, were based upon utility, and every path of trade they struck out, led to some immediate, and tangible good. The result shows itself, in one of the most substantial, and flourishing, but least elegant cities on the continent. The site of the town, I have already described to you as one of the most beautiful, that can be imagined! The fault is to be attributed entirely to the manner in which it is laid out, for the streets though by no means wide, are well and substantially built upon with brick; and a species of yellow free-stone found in the vicinity is coming into use, which, for elegance as a building material, is not surpassed by marble itself. The great defect in the town, is the total want of public squares, and indeed of an agreeable promenade of any kind; this is the more remarkable, I might almost say provoking, as Pittsburgh boasts of one spot, which, if converted into a public place, would, from the view it commands, be unrivalled by any thing of the kind in the Union, unless it be the Battery of New York. I allude to a triangular piece of ground, at the confluence of the two rivers, at the end of the town. It is the site of the old Forts, and commands the first view of the Ohio, and the finest of its waters I have yet seen; the prospect I have described to you in a former letter. Had but the ancient fortifications been preserved, this would have been one of the most interesting spots upon the Continent; of Fort Du Quesne there remains now but a small mound, containing perhaps a couple of loads of earth; Fort Pitt may be more easily traced, part of three bastions about breast high, stand within different private enclosures, and a piece of the curtain which, within a few years, was in complete preservation, may still be discovered among the piles of lumber in a steam saw-mill yard. The commandant's quarters, a steep roofed brick dwelling, in the form of a pentagon, is, however, the only perfect remnant of these old military structures. I expected to have seen the magazine of the Fort, which I was told was an admirable piece of masonry, and still endured in the shape of a Porter cellar, but upon arriving at the spot where it had stood but a few weeks before, a pile of rough stones was all that we could discover. In a country like ours where so few antiquities meet the eye, it is melancholy to see these interesting remnants, thus destroyed, and the very landmarks where they stood effaced for ever. Occasionally too, the works of which every vestige is thus painfully obliterated, were, especially when erected by the French, of a peculiarly striking character. The French engineers who first introduced the art of fortification into this country, were of the school of Vauban, and the enduring monuments they raised were not less noble proofs of their skill, than were the sites selected, of their high military discernment.

There is yet another place in Pittsburgh which at some future day should be appropriated as a public square; a triangular bluff about one hundred feet high stretches like a huge promontory far into the town, and overlooks the whole place. The Pittsburgers, however, I fear are more bent upon increasing their "father's store," than on beautifying the favored spot in which they dwell, and it requires all the cordial hospitality of the place, to reconcile a stranger to the few city improvements he sees going forward, in a community so preeminent for its individual enterprize. I wish we could lend them our 'inproving' corporation for a few weeks, they would be really of service here, and could easily be spared at home; they might too, learn more than one thing of the Pittsburghers, and especially how to supply the city with pure water; we have it here in the greatest abundance. The water is pumped up from the Alleghany, by a steam-engine, into a large open basin, situated on an eminence known as Grant's Hill, from the signal defeat of that rash but gallant officer at its base, during the old French war. From this ample reservoir, pipes conduct the fluid to every part of the city. A large Gothic Cathedral is now about to be erected near the water-works.

You remember Grant's fight, as described by Hall, in his beautiful Western Sketches. Grant bivouacked beneath the hill now called after him, and ordering his reveille to beat at dawn; the French and Indians charged upon him to the sound of his own trumpets, and cut his troops to pieces. His force, I believe, consisted chiefly of Highlanders. The skeleton of a young officer with gold in his pocket, and marks of rank about his person, was turned up in a field not far distant, a few years since. A Western poet, of whose existence I first became aware through a file of the Pittsburg Gazette, (for which, with many interesting facts relating to the adjacent country, I am indebted to Mr. Craig, the Editor,) has commemorated the incident in some verses, among which are the following simple lines:

> "One Highland officer that bloody day
> Retreated up the Alleghany side,
> Wounded, and faint, he missed his tangled way,
> And near its waters laid him down and died.
>
> 'Twas in a furrow of a sandy swell
> Which overlooks the clear and pebbled wave,
> Shrouded in leaves, none found him where he fell,
> And mouldering nature gave the youth a grave.
>
> "Last year a plough passed o'er the quiet spot,
> And brought to light frail vestiges of him,
> Whose unknown fate perhaps is not forgot,
> And fills with horror yet a sister's dream.

On the side of the hill is a place, still pointed out as 'Grant's grave.' I know not why it should be thus designated, however; for I believe that the worthy Colonel, who afterwards served in the British army during the Revolution, never returned to lay his bones in a spot, where the spirits of his rashly sacrificed soldiers might have made him uneasy in his grave. There is a more authentic tomb on the western bank of the Alleghany: it is the last resting-place of an Indian, who, as tradition avers, seeing 'Helen's beauty in a brow of Egypt,' shot himself for love! Poor fellow! he must have been serious! for, as Hudibras saith,

> "He that hangs and beats out brains,
> The devil's in him if he feigns."

The walks and rides in the environs of Pittsburgh, are rendered interesting by a variety of objects, besides the fine scenery through which they lead. A description of the Pennsylvania Canal, which flows on an acqueduct over the Alleghany, and passing through a tunnel of a few yards in length, locks into the Monongahela, on the opposite side of the city, would furnish you with no newer ideas than a description of any other Canal. The Nunnery which is also one of the Lions of the neighhood, I have not hitherto had an opportunity to visit, and "Braddock's field" you have already in a letter by itself; so having now a tolerable idea of the town, with its compact brick dwellings, dingy with coal-smoke; its natural wharves, where the Ohio rises 25 feet; its gravelly banks, lined with steamboats and river-craft, and bustling with business operations upon the most extensive scale, you must follow me in my ride of this morning along the Monongahela.

The fog and coal-smoke together, rendered the atmosphere so thick, even after crossing the bridge over the river to a straggling village opposite, that I verily believe it was only the dazzling sparkle of a pair of queen-like eyes, marshalling me through the gloom, that enabled me to ascend the opposite height with safety. Leaving the rest of the party far behind, I followed their beautiful and high-spirited owner up a winding path, where our horses, after sinking to their fetlocks in the sand, would slip half a pace backward at every step, and gained at last an elevation nearly five hundred feet above the level of the river, where, to my surprise, instead of a sudden descent upon the opposite side, the eminence continued rising in a succession of fertile fields, until the last green slope was terminated by a distant wood. We rode along the edge of the precipice for a mile or two, and from the state of the atmosphere on the side towards the town, you can conceive nothing more singular than the effect of the scene below. Imagine yourself standing on Weehawk height, with your own city brought immediately beneath your feet, the whole landscape bright and clear above, and a cloud so impervious below, that not an object can be discerned at five yards' distance. The gulf seems unfathomable. The hoarse jar of machinery comes upon the ear like the groans of a nether world; and the lurid flame, which ever and anon shoots from some furnace athwart the gloom, shows like the penal element itself. But now the noon-day sun has pierced into that murky glen,—the fog begins to rise—a gilded spire glances here and there in the broad sunshine, and some tall headland stands greenly out from the silver veil that wraps its base; the banner from yonder arsenal floats gaily forth in the warm air; and as the flaky mist rolls more rapidly up the river, begins to stream upon the freshening breeze. The rivers themselves can now be traced far away, with many a dewy island stealing out, one by one, upon their bosom. Beneath, a bustling city seems as if it had sprung at once to life, while the quiet farm-houses slowly appear upon the sleeping fields beyond.

This single view is worth a journey to Pittsburg.

I took an opportunity, while a lady of the party stopped to visit a pensioner in a cottage by the road-side, to examine a coal-pit just beneath the brow of the hill. Dismounting on a small platform some two hundred feet above the river, from which a railway empties the coal into the *coke* kilns upon its bank, and the freight boats upon the shore, I entered an aperture in the rock about six feet in height, and four in breadth. A guide preceded me with a candle and after penetrating under his escort a few hundred yards, I turned aside to explore some of the adjacent shafts; they lie like the streets of one main avenue; the veins of a grand artery, which, after winding through the body of the hill finds its way again to the light, a half a mile distant. In one of these cavernous passages, in a ledge of the rock lay a sleeping man, the water trickling from the black walls around, was the only sound to disturb his slumbers; a long wicked candle stuck in a crevice above his head, shining over thickly matted locks, and features begrimmed with coal-dust, revealed a figure of gigantic mould. The mattock on which his ponderous arm reposed told that it was only a miner at his noonday nap, but he might have been mistaken by one coming suddenly upon his singular place of repose, for a slumbering Titan, who, though pent within such narrow confines, might yet shake the mountain piled upon him to its base.

Our route now, after leading still farther along the height, commanding at every step some new view of the town, and the adjacent country, with the three rivers seaming its bosom, struck at last into a fine wood, and then descending suddenly into a romantic dell, we followed a small stream which soon led us back to the Ohio.—Here again might be traced a display of French taste which when the fabric was entire must have been exceedingly beautiful. It was the remains of a mill dam constructed by the officers of Fort Du Quesne, according to the most approved rules of the time, like a perfect fortification; a part of the curtain, with traces of some of the bastions, yet reward the eye of the curious. At the mouth of the glen we paused to look at a salt factory, and then crossing a bridge over the brook, we passed by a steel factory, and several coke kilns, along the base of the cliff from the summit of which I had so much admired the scene below an hour ago.

The embouchure of the Monongahela was at hand, and stepping aboard of a small horse boat at the point where it loses itself in the Ohio, I soon terminated on the opposite side one of the most delightful rides I can recollect ever to have taken. H.

THE SPIRIT OF LIFE; a Poem, pronounced before the Franklin Society of Brown University: by WILLIS GAYLORD CLARK. Philadelphia: KEY & BIDDLE.—Mr. Clark has written some pretty poetry; and among the fugitive pieces bound up with the main poem in this handsome little volume, there are some, and particularly the Prayer of Mary Queen of Scots, superior in merit and inspiration to that which gives its name to the book. The "spirit of life," universal as the writer insists it is, and vivifying as is its influence, is not very perceptible in the poem which aims to describe its operations and powers. There is manifestly too much haste, and too little of the *vivida vis* in this attempt.

LECTURES ON GENERAL LITERATURE, POETRY, &c. By JAMES MONTGOMERY. Author of 'The World Before the Flood:' constituting Vol. LXIV of HARPERS' FAMILY LIBRARY: New York.—It is not more than a week or two ago since we made a beautiful extract from these Lectures, in which the eloquent and enthusiastic poet asserted the superiority of his art over the sister art of Sculpture; and proved it by comparing the statue of "the Dying Gladiator" with Byron's admirable description of it in Childe Harold. The favorable impression made by that extract will, we think, be realized by the whole book, which is full of burning thoughts and fine and generous views of the ennobling influence of poetry. These Lectures were originally delivered at the *Royal Institution* in London, and are now published enlarged and carefully revised. To these are added, "A Retrospect of Literature," and a "View of Modern English Literature." From the Retrospect, we make an extract that strikes us as quite original:

The Permanence of Words.—An eloquent, but extravagant, writer has hazarded the assertion, that "words are the only things that last for ever."*—Nor is this merely a splendid saying, or a startling paradox, that may be qualified by explanation into commonplace; but with respect to man, and his works on earth, it is literally true. Temples and palaces, amphitheatres and catacombs—monuments of power, and magnificence, and skill, to perpetuate the memory, and preserve even the ashes, of those who lived in past ages—must, in the revolutions of mundane events, not only perish themselves by violence or decay, but the very dust in which they perished be so scattered as to leave no trace of their material existence behind. There is no security beyond the passing moment for the most permanent, or the most precious of these; they are as much in jeopardy as ever, after having escaped the changes and chances of thousands of years. An earthquake may suddenly ingulf the pyramids of Egypt, and leave the sand of the desert as blank as the tide would have left it on the seashore. A hammer in the hand of an idiot may break to pieces the Apollo Belvidere, or the Venus de'Medici, which are scarcely less worshipped as miracles of art in our day than they were by idolaters of old as representatives of deities.

Looking abroad over the whole world, after the lapse of nearly six thousand years, what have we of the past but the words in which its history is recorded? What besides a few mouldering and brittle ruins, which time is imperceptibly touching down into dust,—what, besides these, remains of the glory, the grandeur, the intelligence, the supremacy of the Grecian republics, or the empire of Rome? Nothing but the words of poets, historians, philosophers, and orators, who being dead yet speak, and in their immortal works still maintain their dominion over inferior minds through all posterity. And these intellectual sovereigns not only govern our spirits from the tomb by the power of their thoughts, but their very voices are heard, by our living ears in the accents of their mother tongues. The beauty, the eloquence, and art of these collocations of sounds and syllables, the learned alone can appreciate, and that only (in some cases) after long, intense, and laborious investigation; but as thought can be made to transmigrate from one body of words into another, even through all the languages of the earth, without losing what may be called its personal identity,—the great minds of antiquity continue to hold their ascendency over the opinions, manners, characters, institutions, and events of all ages and nations through which their posthumous compositions have found way, and been made the earliest subjects of study, the highest standards of morals, and the most perfect examples of taste, to the master-minds in every state of civilized society. In this respect, the "words" of inspired prophets and apostles among the Jews, and those of gifted writers among the ancient gentiles, may truly be said to "last for ever."

Words are the vehicles by which thought is made visible to the eye, audible to the ear, and intelligible to the mind of another; they are the palpable forms of ideas, without which these would be intangible as the spirit that conceives or the breath that would utter them. And of such influence is speech or writing, as the conductor of thought, that, though all words do not "last for ever," and it is well for the peace of the world, and the happiness of individuals, that they do not,—yet even here every word has its date and its effect; so that with the tongue or the pen we are continually doing good or evil to ourselves or our neighbors. On a single phrase expressed in anger or affection, in levity or seriousness, the whole progress of a human spirit through life—perhaps even to eternity—may be changed from the direction which it was pursuing, whether right or wrong. For in nothing is the power and indestructibility of words more signally exemplified than in small compositions, such as stories, essays, parables, songs, proverbs, and all the minor and more exquisite forms of composition. It is a fact, not obvious perhaps, but capable of perfect proof, that knowledge, in all eras which have been distinguished as enlightened, has been propagated more by tracts than by volumes.—We need but appeal, in evidence of this, to the state of learning in our own land at the present day, when all classes of people are more or less instructed.—On this point I shall have a future opportunity of expatiating, and will therefore, at present, offer only two examples of the permanence of words, involving sacred or important truth, of equal value and application, in all periods and countries, and among all people to whom they may be delivered.

In the youth of the Roman commonwealth, during a quarrel between the patricians and plebeians, when the latter had separated themselves from the former, on the plea that they would no longer labour to maintain the unproductive class in indolent luxury, Menenius Agrippa, by the wall-known fable of a schism in the human body, in which the limbs mutinied against the stomach, brought the seceders to a sense of their duty and interest, and reconciled a feud which, had it been further inflamed, might have destroyed the state, and turned the history of the world itself thenceforwaid into an entirely new channel, by interrupting the tide of events which were carrying Rome to the sumit of dominion. The lesson which that sagacious patriot taught to his countrymen and contemporaries, he taught to all generations to come. His fable has already, by more than a thousand years, survived the empire which it rescued from premature destruction.

The other instance of a small form of words, in which dwells not an immortal only, but a divine spirit, is that prayer which our Saviour taught his disciples. How many millions and millions of times has that prayer been preferred by Christians of all denominations! So wide, indeed, is the sound thereof gone forth, that daily, and almost without intermission, from the ends of the earth, and afar off upon the sea, it is ascending to Heaven like incense and a pure offering; nor needs it the gift of prophecy to foretell, that though "heaven and earth shall pass away," these words of our blessed Lord "shall not pass away," till every petition in it has been answered—till the kingdom of God shall come, and his will be done in earth as it is in heaven.

EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE, AND THE PHYSIOLOGY OF DIGESTION. By WM. BEAUMONT, M. D. Surgeon of the United States Army. New York: G. & C. & H. CARVILL.—This is a very remarkable publication; being nothing more nor less than the record of the observations made during a series of years, by a skilful medical man, upon the *visible* action of the stomach of a living man. The case was that of a Canadian *voyageur*, who, at the age of eighteen, received accidentally the charge of a musket loaded with duckshot, in his side, he being within a yard of the muzzle. The wound perforated the stomach. Dr. B. was called to the wounded man—succeeded in saving his life, restoring his health; and yet the orifice in the stomach remained for years unclosed. Here, then, an opportunity was presented of watching Nature in her most secret operations, of surprising her in her own laboratory, and of ascertaining, in the living man, the processes by which life is maintained; for, when we cease to digest, we cease to live. The result is highly curious and instructive, and cannot fail, we should think, of producing important changes and improvements in the art of medicine. *Spallanzani*, and others, had made experiments upon the powers of the gastric juice, by administering to animals food of different kinds, in perforated metal balls; but all of these fail of certainty and interest, in comparison with those instituted and so faithfully followed up by Dr. Beaumont, and ultimately by the Surgeon General of the Army, Dr. Lovell.

THE LAW GLOSSARY: by THOMAS TAYLOR. Albany: W. A. GOULD. New York: GOULD, BANKS & Co.—This cannot be otherwise than a useful work in our country, where the dead languages are not as familiar as, for the improvement and purification of both taste and language, we wish they were, but where lawyers do much abound. It is a selection and translation of the various and numerous sentences, phrases, and maxims, spread through the old law books, and many of which are still preserved and in use at this day, in Greek, Latin, French, Saxon, &c. The author has, in our judgment, well fulfilled his task. His translations are easy and accurate, so far as we have looked through his pages; and the historical notes in the Appendix are some of them alike curious and interesting. The volume is dedicated, by permission, to Chief Justice Savage; and must, we think, be well received by the profession, and still more by those not of it, but who yet in the conflicting claims of a busy world, are often brought into contact with it.

(Concluded from page 821.)

But it is not at all necessary for the usefulness of the suspension railway, that it should be in every respect as capable of enduring heavy loads as the railway now most usually constructed. The important question is, whether, taking into consideration the expense of its construction, the cost of transportation upon it will be less than upon an ordinary road. If this point is established as it has been, beyond all doubt, its importance is manifest. There are many parts of the United States where the increase of population and of business calls for greater facilities of communication; yet the travel is not sufficient to support the enormous expense of the double iron railway. There are other sections so rugged and uneven, that whatever might be the amount of travel, it could not pay the expense of embankments, excavations, and other works necessary for attaining the level required for the road. In all such cases the suspension road, on account of its comparatively trifling expense, can be used to great advantage. The average cost of a suspension railroad, built with prudence and economy, extending over a country, the surface of which presents no peculiar advantages or disadvantages, is about one quarter of that of the double track iron road now in use, and this difference is increased in proportion as the country, over which the road is to be constructed, is more rugged and uneven than usual. Now suppose that the suspension road is only capable of bearing one third of the momentum which the other road can bear, (and this is certainly a greater allowance than it would be necessary to make in practice,) yet the cost being one fourth that of the other, and its power one third, it follows, of course, that the suspension road would be much the most economical.

In a new country, therefore, where means are limited, it must be of immense advantage. Its merits have not hitherto been generally known. It has been but very little used in England, probably on account of the high price of timber, and on this side of the Atlantic we have been slow to adopt suggestions that have not been proved and tested by experiment. But it is now getting into more extensive favor in those parts of the country where timber is abundant. It will, no doubt, in a short time, prove a most important method of inland transportation.

☞ We owe an apology to our friends, for not issuing these numbers on Saturday, as promised. They have been delayed two days longer, in order that the Index and Title Page might accompany them, to make the work complete for the year.

December 30, 1833.

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGECOMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines. and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject see No. 40, page 73 of this Journal. [illegible]

ALBANY SEED STORE AND HORTICULTURAL REPOSITORY.

The subscriber having resumed the charge of the above establishment, is now enabled to furnish traders and others with FRESH GARDEN SEEDS, upon very favorable terms, and of the growth of 1833, *warranted* of the best quality.

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It is earnestly requested whenever there are any failures hereafter, they should be represented to the subscriber; not that it is possible to obviate unfavorable seasons and circumstances but that satisfaction may be rendered and perfection approximated.

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☞ Catalogues may be had at the Store; if sent for by mail, will be forwarded gratis. Orders solicited early, as the better justice can be done in the execution.

⁂ Mr. Thorburn is also Agent for the following publications, to wit:—

New York Farmer and American Gardeners' Magazine.

Mechanics' Magazine and Register of Inventions & Improvements.

American Railroad Journal and Advocate of Internal Improvements; and the

New-York American, *Daily, Tri-Weekly*, and *Semi-Weekly*; *either* or *all* of which may be seen and obtained by those who wish them, by calling at 347 *North Market street, Albany*.

☞ **TOWNSEND & DURFEE**, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co, Albany: or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York,
January 29, 1833 } F3 tf

TO RAILROAD COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, will undertake to build CARS that will carry along their own railway, and may be used on level M'Adam roads. They will save ten millions of money to be wasted on 1000 miles of iron railroads to be laid in the United States within a few years and dispense with tracks and double tracks. These Cars may be drawn by horses or steam. He claims to have discovered them ever since 1825, by his caveats filed in the Patent Office Apply, post paid. 81 R J M N & F

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Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street,
J31 6t corner of Maidenlane.

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☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street,
Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad. I cheerfully furnish thee with the following information The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to lateral angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction
of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Phila.,
m1 ly Germant. and Norrist. Railroad

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No. 264 Elizabeth street, near Bleecker street,
New-York.

☞ RAILROAD COMPANIES would do well to examine these Cars; a specimen of which may be seen on that part of the New-York and Harlæm Railroad, now in operation.
J 3 tf

RAILROAD CAR WHEELS AND BOXES,

AND OTHER RAILROAD CASTINGS.

☞ Also. AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.

J8 ROGERS, KETCHUM & GROSVENOR.

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

INSTRUMENTS.

SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable

They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES P. STABLER,
Superintendent of Construction of the Baltimore and Ohio
Railroad.

I have examined with care several Engineers' instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.

Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same. [illegible]